

pha4262.ST25.txt

SEQUENCE LISTING

<110> Pharmacia Corporation
 Stephenson, Diane T
 Taylor, Duncan P

<120> Compositions of a Cyclooxygenase-2 Selective Inhibitor and a Calcium
 Modulating Agent for the Treatment of Central Nervous System Damage

<130> PHA 42620.1

<150> US 60/464,499

<151> 2003-04-22

<160> 26

<170> PatentIn version 3.1

<210> 1

<211> 1873

<212> PRT

<213> Homo sapiens

<400> 1

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Glu Trp Lys Pro Phe Glu Thr Ile Ile Leu Leu Thr Ile Phe Ala Asn
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Cys Val Ala Leu Ala Val Tyr Leu Pro Met Pro Glu Asp Asp Asn Asn
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 Ser Leu Asn Leu Gly Leu Glu Lys Leu Glu Tyr Phe Phe Leu Ile Val
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 Phe Ser Ile Glu Ala Ala Met Lys Ile Ile Ala Tyr Gly Phe Leu Phe
 100 105 110
 His Gln Asp Ala Tyr Leu Arg Ser Gly Trp Asn Val Leu Asp Phe Thr
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 145 150 155 160
 Val Lys Ala Leu Arg Ala Phe Arg Val Leu Arg Pro Leu Arg Leu Val
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 Ser Gly Val Pro Ser Leu Gln Val Val Leu Asn Ser Ile Phe Lys Ala
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 Met Leu Pro Leu Phe His Ile Ala Leu Leu Val Leu Phe Met Val Ile
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 Ile Tyr Ala Ile Ile Gly Leu Glu Leu Phe Lys Gly Lys Met His Lys
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 225 230 235 240
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 245 250 255
 Asn Gly Ser Glu Cys Arg Gly Gly Trp Pro Gly Pro Asn His Gly Ile
 260 265 270
 Thr His Phe Asp Asn Phe Gly Phe Ser Met Leu Thr Val Tyr Gln Cys
 275 280 285
 Ile Thr Met Glu Gly Trp Thr Asp Val Leu Tyr Trp Val Asn Asp Ala
 290 295 300
 Ile Gly Asn Glu Trp Pro Trp Ile Tyr Phe Val Thr Leu Ile Leu Leu
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Gly Ser Phe Phe Ile Leu Asn Leu Val Leu Gly Val Leu Ser Gly Glu
325 330 335

Phe Thr Lys Glu Arg Glu Lys Ala Lys Ser Arg Gly Thr Phe Gln Lys
340 345 350

Leu Arg Glu Lys Gln Gln Leu Asp Glu Asp Leu Arg Gly Tyr Met Ser
355 360 365

Trp Ile Thr Gln Gly Glu Val Met Asp Val Glu Asp Phe Arg Glu Gly
370 375 380

Lys Leu Ser Leu Asp Glu Gly Gly Ser Asp Thr Glu Ser Leu Tyr Glu
385 390 395 400

Ile Ala Gly Leu Asn Lys Ile Ile Gln Phe Ile Arg His Trp Arg Gln
405 410 415

Trp Asn Arg Ile Phe Arg Trp Lys Cys His Asp Ile Val Lys Ser Lys
420 425 430

Val Phe Tyr Trp Leu Val Ile Leu Ile Val Ala Leu Asn Thr Leu Ser
435 440 445

Ile Ala Ser Glu His His Asn Gln Pro Leu Trp Leu Thr Arg Leu Gln
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Asp Ile Ala Asn Arg Val Leu Leu Ser Leu Phe Thr Thr Glu Met Leu
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515 520 525

Cys Ile Arg Leu Leu Arg Ile Phe Lys Ile Thr Lys Tyr Trp Thr Ser
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Gly Met Gln Leu Phe Gly Gly Arg Tyr Asp Phe Glu Asp Thr Glu Val
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690 695 700

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Arg Asn Tyr Phe Asn Met Leu Asp Leu Leu Val Val Ala Val Ser Leu
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Ser Lys Met Thr Glu Glu Glu Cys Arg Gly Tyr Tyr Tyr Val Tyr Lys
 965 970 975

Asp Gly Asp Pro Met Gln Ile Glu Leu Arg His Arg Glu Trp Val His
 980 985 990

Ser Asp Phe His Phe Asp Asn Val Leu Ser Ala Met Met Ser Leu Phe
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 Arg Cys Tyr Ile Pro Lys Asn Pro Tyr Gln Tyr Gln Val Trp Tyr
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 Cys Gly Asn Val Asp Pro Asp Glu Ser Ala Arg Ile Ser Ser Ala
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 1580 1585 1590
 Glu Glu Gly Ile Phe Arg Arg Thr Gly Gly Leu Phe Gly Gln Val
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 Glu Ser Pro Val Phe Leu Glu Asp Phe Pro Gln Asp Pro Arg Thr
 1640 1645 1650
 Asn Pro Leu Ala Arg Ala Asn Thr Asn Asn Ala Asn Ala Asn Val
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 Ala Tyr Gly Asn Ser Asn His Ser Asn Ser His Val Phe Ser Ser
 1670 1675 1680
 Val His Tyr Glu Arg Glu Phe Pro Glu Glu Thr Glu Thr Pro Ala
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 Thr Arg Gly Arg Ala Leu Gly Gln Pro Cys Arg Val Leu Gly Pro
 1700 1705 1710
 His Ser Lys Pro Cys Val Glu Met Leu Lys Gly Leu Leu Thr Gln
 1715 1720 1725
 Arg Ala Met Pro Arg Gly Gln Ala Pro Pro Ala Pro Cys Gln Cys
 1730 1735 1740
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 1745 1750 1755
 Pro Gly Ser Leu His Glu Glu Thr Pro His Ser Arg Ser Thr Arg
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 Glu Asn Thr Ser Arg Cys Ser Ala Pro Ala Thr Ala Leu Leu Ile

1775

1780

Gln Lys Ala Leu Val Arg Gly Gly Leu Gly Thr Leu Ala Ala Asp
1790 1795 1800

Ala Asn Phe Ile Met Ala Thr Gly Gln Ala Leu Gly Asp Ala Cys
1805 1810 1815

Gln Met Glu Pro Glu Glu Val Glu Ile Met Ala Thr Glu Leu Leu
1820 1825 1830

Lys Gly Arg Glu Ala Pro Glu Gly Met Ala Ser Ser Leu Gly Cys
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<211> 1873

<212> PRT

<213> Homo sapiens

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35 40 45

Glu Trp Lys Pro Phe Glu Thr Ile Ile Leu Leu Thr Ile Phe Ala Asn
50 55 60

Cys Val Ala Leu Ala Val Tyr Leu Pro Met Pro Glu Asp Asp Asn Asn
65 70 75 80

Ser Leu Asn Leu Gly Leu Glu Lys Leu Glu Tyr Phe Phe Leu Ile Val
85 90 95

Phe Ser Ile Glu Ala Ala Met Lys Ile Ile Ala Tyr Gly Phe Leu Phe
 100 105 110

His Gln Asp Ala Tyr Leu Arg Ser Gly Trp Asn Val Leu Asp Phe Thr
 115 120 125

Ile Val Phe Leu Gly Val Phe Thr Val Ile Leu Glu Gln Val Asn Val
 130 135 140

Ile Gln Ser His Thr Ala Pro Met Ser Ser Lys Gly Ala Gly Leu Asp
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Val Lys Ala Leu Arg Ala Phe Arg Val Leu Arg Pro Leu Arg Leu Val
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Ser Gly Val Pro Ser Leu Gln Val Val Leu Asn Ser Ile Phe Lys Ala
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Met Leu Pro Leu Phe His Ile Ala Leu Leu Val Leu Phe Met Val Ile
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Ile Tyr Ala Ile Ile Gly Leu Glu Leu Phe Lys Gly Lys Met His Lys
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Thr Cys Tyr Phe Ile Gly Thr Asp Ile Val Ala Thr Val Glu Asn Glu
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 245 250 255

Asn Gly Ser Glu Cys Arg Gly Gly Cys Pro Gly Pro Asn His Gly Ile
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Thr His Phe Asp Asn Phe Gly Phe Ser Met Leu Thr Val Tyr Gln Cys
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Ile Thr Met Glu Gly Trp Thr Asp Val Leu Tyr Trp Val Asn Asp Ala
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Gly Ser Phe Phe Ile Leu Asn Leu Val Leu Gly Val Leu Ser Gly Glu
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Phe Thr Lys Glu Arg Glu Lys Ala Lys Ser Arg Gly Thr Phe Gln Lys
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 405 410 415
 Trp Asn Arg Ile Phe Arg Trp Lys Cys His Asp Ile Val Lys Ser Lys
 420 425 430
 Val Phe Tyr Trp Leu Val Ile Leu Ile Val Ala Leu Asn Thr Leu Ser
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 Ile Ala Ser Glu His His Asn Gln Pro His Trp Leu Thr Arg Leu Gln
 450 455 460
 Asp Ile Ala Asn Arg Val Leu Leu Ser Leu Phe Thr Thr Glu Met Leu
 465 470 475 480
 Met Lys Met Tyr Gly Leu Gly Leu Arg Gln Tyr Phe Met Ser Ile Phe
 485 490 495
 Asn Arg Phe Asp Cys Phe Val Val Cys Ser Gly Ile Leu Glu Ile Leu
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 Leu Val Glu Ser Gly Ala Met Thr Pro Leu Gly Ile Ser Val Leu Arg
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 545 550 555 560
 Ser Leu Leu Leu Leu Leu Phe Leu Phe Ile Val Ile Phe Arg Leu Leu
 565 570 575
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 580 585 590
 Arg Arg Ser Asn Phe Asp Asn Phe Pro Gln Ala Leu Ile Ser Val Phe
 595 600 605

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675 680 685

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690 695 700

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705 710 715 720

Lys Ile Asp Glu Phe Glu Ser Asn Val Asn Glu Val Lys Asp Pro Tyr
725 730 735

Pro Ser Ala Asp Phe Pro Gly Asp Asp Glu Glu Asp Glu Pro Glu Ile
740 745 750

Pro Leu Ser Pro Arg Pro Arg Pro Leu Ala Glu Leu Gln Leu Lys Glu
755 760 765

Lys Ala Val Pro Ile Pro Glu Ala Ser Ser Phe Phe Ile Phe Ser Pro
770 775 780

Thr Asn Lys Ile Arg Val Leu Cys His Arg Ile Val Asn Ala Thr Trp
785 790 795 800

Phe Thr Asn Phe Ile Leu Leu Phe Ile Leu Leu Ser Ser Ala Ala Leu
805 810 815

Ala Ala Glu Asp Pro Ile Arg Ala Asp Ser Met Arg Asn Gln Ile Leu
820 825 830

Lys His Phe Asp Ile Gly Phe Thr Ser Val Phe Thr Val Glu Ile Val
835 840 845

Leu Lys Met Thr Thr Tyr Gly Ala Phe Leu His Lys Gly Ser Phe Cys
Page 12

850

855

Arg Asn Tyr Phe Asn Met Leu Asp Leu Leu Val Val Ala Val Ser Leu
865 870 875 880

Ile Ser Met Gly Leu Glu Ser Ser Ala Ile Ser Val Val Lys Ile Leu
885 890 895

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900 905 910

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915 920 925

Gly Asn Ile Val Leu Val Thr Thr Leu Leu Gln Phe Met Phe Ala Cys
930 935 940

Ile Gly Val Gln Leu Phe Lys Gly Lys Phe Phe Arg Cys Thr Asp Leu
945 950 955 960

Ser Lys Met Thr Glu Glu Glu Cys Arg Gly Tyr Tyr Tyr Val Tyr Lys
965 970 975

Asp Gly Asp Pro Met Gln Ile Glu Leu Arg His Arg Glu Trp Val His
980 985 990

Ser Asp Phe His Phe Asp Asn Val Leu Ser Ala Met Met Ser Leu Phe
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Thr Val Ser Thr Phe Glu Gly Trp Pro Gln Leu Leu Tyr Lys Ala
1010 1015 1020

Ile Asp Ser Asn Ala Glu Asp Val Gly Pro Ile Tyr Asn Asn Arg
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Val Glu Met Ala Ile Phe Phe Ile Ile Tyr Ile Ile Leu Ile Ala
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 1325 1330 1335

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 Glu Leu Arg Ala Ile Ile Lys Lys Ile Trp Lys Arg Thr Ser Met
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 Thr Val Gly Lys Phe Tyr Ala Thr Phe Leu Ile Gln Glu His Phe
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1595 1600 1605

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1625 1630 1635

Glu Ser Pro Val Phe Leu Glu Asp Phe Pro Gln Asp Pro Arg Thr
1640 1645 1650

Asn Pro Leu Ala Arg Ala Asn Thr Asn Asn Ala Asn Ala Asn Val
1655 1660 1665

Ala Tyr Ala Asn Ser Asn His Ser Asn Ser His Val Phe Ser Ser
1670 1675 1680

Val His Tyr Glu Arg Glu Phe Pro Glu Glu Thr Glu Thr Pro Ala
1685 1690 1695

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1745 1750 1755

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1760 1765 1770

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1775 1780 1785

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1790 1795 1800

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1805

1810

1815

Gln Met Glu Pro Glu Glu Val Glu Ile Met Ala Thr Glu Leu Leu
 1820 1825 1830

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 1865 1870

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<211> 2221

<212> PRT

<213> Homo sapiens

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 50 55 60

Met Gly Ser Ala Gly Asn Ala Thr Ile Ser Thr Val Ser Ser Thr Gln
 65 70 75 80

Arg Lys Arg Gln Gln Tyr Gly Lys Pro Lys Lys Gln Gly Ser Thr Thr
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 100 105 110

Ile Arg Arg Ala Cys Ile Ser Ile Val Glu Trp Lys Pro Phe Glu Ile
 115 120 125

Ile Ile Leu Leu Thr Ile Phe Ala Asn Cys Val Ala Leu Ala Ile Tyr
 130 135 140
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 145 150 155 160
 Arg Val Glu Tyr Leu Phe Leu Ile Ile Phe Thr Val Glu Ala Phe Leu
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 Lys Val Ile Ala Tyr Gly Leu Leu Phe His Pro Asn Ala Tyr Leu Arg
 180 185 190
 Asn Gly Trp Asn Leu Leu Asp Phe Ile Ile Val Val Val Gly Leu Phe
 195 200 205
 Ser Ala Ile Leu Glu Gln Ala Thr Lys Ala Asp Gly Ala Asn Ala Leu
 210 215 220
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 225 230 235 240
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 245 250 255
 Val Leu Asn Ser Ile Ile Lys Ala Met Val Pro Leu Leu His Ile Ala
 260 265 270
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 275 280 285
 Leu Phe Met Gly Lys Met His Lys Thr Cys Tyr Asn Gln Glu Gly Ile
 290 295 300
 Ala Asp Val Pro Ala Glu Asp Asp Pro Ser Pro Cys Ala Leu Glu Thr
 305 310 315 320
 Gly His Gly Arg Gln Cys Gln Asn Gly Thr Val Cys Lys Pro Gly Trp
 325 330 335
 Asp Gly Pro Lys His Gly Ile Thr Asn Phe Asp Asn Phe Ala Phe Ala
 340 345 350
 Met Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp Val
 355 360 365
 Leu Tyr Trp Val Asn Asp Ala Val Gly Arg Asp Trp Pro Trp Ile Tyr
 370 375 380

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Phe Val Thr Leu Ile Ile Ile Gly Ser Phe Phe Val Leu Asn Leu Val
 385 390 395 400
 Leu Gly Val Leu Ser Gly Glu Phe Ser Lys Glu Arg Glu Lys Ala Lys
 405 410 415
 Ala Arg Gly Asp Phe Gln Lys Leu Arg Glu Lys Gln Gln Leu Glu Glu
 420 425 430
 Asp Leu Lys Gly Tyr Leu Asp Trp Ile Thr Gln Ala Glu Asp Ile Asp
 435 440 445
 Pro Glu Asn Glu Asp Glu Gly Met Asp Glu Glu Lys Pro Arg Asn Met
 450 455 460
 Ser Met Pro Thr Ser Glu Thr Glu Ser Val Asn Thr Glu Asn Val Ala
 465 470 475 480
 Gly Gly Asp Ile Glu Gly Glu Asn Cys Gly Ala Arg Leu Ala His Arg
 485 490 495
 Ile Ser Lys Ser Lys Phe Ser Arg Tyr Trp Arg Arg Trp Asn Arg Phe
 500 505 510
 Cys Arg Arg Lys Cys Arg Ala Ala Val Lys Ser Asn Val Phe Tyr Trp
 515 520 525
 Leu Val Ile Phe Leu Val Phe Leu Asn Thr Leu Thr Ile Ala Ser Glu
 530 535 540
 His Tyr Asn Gln Pro Asn Trp Leu Thr Glu Val Gln Asp Thr Ala Asn
 545 550 555 560
 Lys Ala Leu Leu Ala Leu Phe Thr Ala Glu Met Leu Leu Lys Met Tyr
 565 570 575
 Ser Leu Gly Leu Gln Ala Tyr Phe Val Ser Leu Phe Asn Arg Phe Asp
 580 585 590
 Cys Phe Val Val Cys Gly Gly Ile Leu Glu Thr Ile Leu Val Glu Thr
 595 600 605
 Lys Ile Met Ser Pro Leu Gly Ile Ser Val Leu Arg Cys Val Arg Leu
 610 615 620
 Leu Arg Ile Phe Lys Ile Thr Arg Tyr Trp Asn Ser Leu Ser Asn Leu
 625 630 635 640

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Val Ala Ser Leu Leu Asn Ser Val Arg Ser Ile Ala Ser Leu Leu Leu
645 650 655

Leu Leu Phe Leu Phe Ile Ile Ile Phe Ser Leu Leu Gly Met Gln Leu
660 665 670

Phe Gly Gly Lys Phe Asn Phe Asp Glu Met Gln Thr Arg Arg Ser Thr
675 680 685

Phe Asp Asn Phe Pro Gln Ser Leu Leu Thr Val Phe Gln Ile Leu Thr
690 695 700

Gly Glu Asp Trp Asn Ser Val Met Tyr Asp Gly Ile Met Ala Tyr Gly
705 710 715 720

Gly Pro Ser Phe Pro Gly Met Leu Val Cys Ile Tyr Phe Ile Ile Leu
725 730 735

Phe Ile Cys Gly Asn Tyr Ile Leu Leu Asn Val Phe Leu Ala Ile Ala
740 745 750

Val Asp Asn Leu Ala Asp Ala Glu Ser Leu Thr Ser Ala Gln Lys Glu
755 760 765

Glu Glu Glu Glu Lys Glu Arg Lys Lys Leu Ala Arg Thr Ala Ser Pro
770 775 780

Glu Lys Lys Gln Glu Leu Val Glu Lys Pro Ala Val Gly Glu Ser Lys
785 790 795 800

Glu Glu Lys Ile Glu Leu Lys Ser Ile Thr Ala Asp Gly Glu Ser Pro
805 810 815

Pro Ala Thr Lys Ile Asn Met Asp Asp Leu Gln Pro Asn Glu Asn Glu
820 825 830

Asp Lys Ser Pro Tyr Pro Asn Pro Glu Thr Thr Gly Glu Glu Asp Glu
835 840 845

Glu Glu Pro Glu Met Pro Val Gly Pro Arg Pro Arg Pro Leu Ser Glu
850 855 860

Leu His Leu Lys Glu Lys Ala Val Pro Met Pro Glu Ala Ser Ala Phe
865 870 875 880

Phe Ile Phe Ser Ser Asn Asn Arg Phe Arg Leu Gln Cys His Arg Ile
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Val Asn Asp Thr Ile Phe Thr Asn Leu Ile Leu Phe Phe Ile Leu Leu
900 905 910

Ser Ser Ile Ser Leu Ala Ala Glu Asp Pro Val Gln His Thr Ser Phe
915 920 925

Arg Asn His Ile Leu Phe Tyr Phe Asp Ile Val Phe Thr Thr Ile Phe
930 935 940

Thr Ile Glu Ile Ala Leu Lys Ile Leu Gly Asn Ala Asp Tyr Val Phe
945 950 955 960

Thr Ser Ile Phe Thr Leu Glu Ile Ile Leu Lys Met Thr Ala Tyr Gly
965 970 975

Ala Phe Leu His Lys Gly Ser Phe Cys Arg Asn Tyr Phe Asn Ile Leu
980 985 990

Asp Leu Leu Val Val Ser Val Ser Leu Ile Ser Phe Gly Ile Gln Ser
995 1000 1005

Ser Ala Ile Asn Val Val Lys Ile Leu Arg Val Leu Arg Val Leu
1010 1015 1020

Arg Pro Leu Arg Ala Ile Asn Arg Ala Lys Gly Leu Lys His Val
1025 1030 1035

Val Gln Cys Val Phe Val Ala Ile Arg Thr Ile Gly Asn Ile Val
1040 1045 1050

Ile Val Thr Thr Leu Leu Gln Phe Met Phe Ala Cys Ile Gly Val
1055 1060 1065

Gln Leu Phe Lys Gly Lys Leu Tyr Thr Cys Ser Asp Ser Ser Lys
1070 1075 1080

Gln Thr Glu Ala Glu Cys Lys Gly Asn Tyr Ile Thr Tyr Lys Asp
1085 1090 1095

Gly Glu Val Asp His Pro Ile Ile Gln Pro Arg Ser Trp Glu Asn
1100 1105 1110

Ser Lys Phe Asp Phe Asp Asn Val Leu Ala Ala Met Met Ala Leu
1115 1120 1125

Phe Thr Val Ser Thr Phe Glu Gly Trp Pro Glu Leu Leu Tyr Arg
 1130 1135 1140
 Ser Ile Asp Ser His Thr Glu Asp Lys Gly Pro Ile Tyr Asn Tyr
 1145 1150 1155
 Arg Val Glu Ile Ser Ile Phe Phe Ile Ile Tyr Ile Ile Ile Ile
 1160 1165 1170
 Ala Phe Phe Met Met Asn Ile Phe Val Gly Phe Val Ile Val Thr
 1175 1180 1185
 Phe Gln Glu Gln Gly Glu Gln Glu Tyr Lys Asn Cys Glu Leu Asp
 1190 1195 1200
 Lys Asn Gln Arg Gln Cys Val Glu Tyr Ala Leu Lys Ala Arg Pro
 1205 1210 1215
 Leu Arg Arg Tyr Ile Pro Lys Asn Gln His Gln Tyr Lys Val Trp
 1220 1225 1230
 Tyr Val Val Asn Ser Thr Tyr Phe Glu Tyr Leu Met Phe Val Leu
 1235 1240 1245
 Ile Leu Leu Asn Thr Ile Cys Leu Ala Met Gln His Tyr Gly Gln
 1250 1255 1260
 Ser Cys Leu Phe Lys Ile Ala Met Asn Ile Leu Asn Met Leu Phe
 1265 1270 1275
 Thr Gly Leu Phe Thr Val Glu Met Ile Leu Lys Leu Ile Ala Phe
 1280 1285 1290
 Lys Pro Lys Gly Tyr Phe Ser Asp Pro Trp Asn Val Phe Asp Phe
 1295 1300 1305
 Leu Ile Val Ile Gly Ser Ile Ile Asp Val Ile Leu Ser Glu Thr
 1310 1315 1320
 Asn His Tyr Phe Cys Asp Ala Trp Asn Thr Phe Asp Ala Leu Ile
 1325 1330 1335
 Val Val Gly Ser Ile Val Asp Ile Ala Ile Thr Glu Val Asn Pro
 1340 1345 1350
 Ala Glu His Thr Gln Cys Ser Pro Ser Met Asn Ala Glu Glu Asn
 1355 1360 1365

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Ser	Arg	Ile	Ser	Ile	Thr	Phe	Phe	Arg	Leu	Phe	Arg	Val	Met	Arg
	1370					1375					1380			
Leu	Val	Lys	Leu	Leu	Ser	Arg	Gly	Glu	Gly	Ile	Arg	Thr	Leu	Leu
	1385					1390					1395			
Trp	Thr	Phe	Ile	Lys	Ser	Phe	Gln	Ala	Leu	Pro	Tyr	Val	Ala	Leu
	1400					1405					1410			
Leu	Ile	Val	Met	Leu	Phe	Phe	Ile	Tyr	Ala	Val	Ile	Gly	Met	Gln
	1415					1420					1425			
Val	Phe	Gly	Lys	Ile	Ala	Leu	Asn	Asp	Thr	Thr	Glu	Ile	Asn	Arg
	1430					1435					1440			
Asn	Asn	Asn	Phe	Gln	Thr	Phe	Pro	Gln	Ala	Val	Leu	Leu	Leu	Phe
	1445					1450					1455			
Arg	Cys	Ala	Thr	Gly	Glu	Ala	Trp	Gln	Asp	Ile	Met	Leu	Ala	Cys
	1460					1465					1470			
Met	Pro	Gly	Lys	Lys	Cys	Ala	Pro	Glu	Ser	Glu	Pro	Ser	Asn	Ser
	1475					1480					1485			
Thr	Glu	Gly	Glu	Thr	Pro	Cys	Gly	Ser	Ser	Phe	Ala	Val	Phe	Tyr
	1490					1495					1500			
Phe	Ile	Ser	Phe	Tyr	Met	Leu	Cys	Ala	Phe	Leu	Ile	Ile	Asn	Leu
	1505					1510					1515			
Phe	Val	Ala	Val	Ile	Met	Asp	Asn	Phe	Asp	Tyr	Leu	Thr	Arg	Asp
	1520					1525					1530			
Trp	Ser	Ile	Leu	Gly	Pro	His	His	Leu	Asp	Glu	Phe	Lys	Arg	Ile
	1535					1540					1545			
Trp	Ala	Glu	Tyr	Asp	Pro	Glu	Ala	Lys	Gly	Arg	Ile	Lys	His	Leu
	1550					1555					1560			
Asp	Val	Val	Thr	Leu	Leu	Arg	Arg	Ile	Gln	Pro	Pro	Leu	Gly	Phe
	1565					1570					1575			
Gly	Lys	Leu	Cys	Pro	His	Arg	Val	Ala	Cys	Lys	Arg	Leu	Val	Ser
	1580					1585					1590			
Met	Asn	Met	Pro	Leu	Asn	Ser	Asp	Gly	Thr	Val	Met	Phe	Asn	Ala
	1595					1600					1605			

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Thr	Leu	Phe	Ala	Leu	Val	Arg	Thr	Ala	Leu	Arg	Ile	Lys	Thr	Glu
	1610					1615					1620			
Gly	Asn	Leu	Glu	Gln	Ala	Asn	Glu	Glu	Leu	Arg	Ala	Ile	Ile	Lys
	1625					1630					1635			
Lys	Ile	Trp	Lys	Arg	Thr	Ser	Met	Lys	Leu	Leu	Asp	Gln	Val	Val
	1640					1645					1650			
Pro	Pro	Ala	Gly	Asp	Asp	Glu	Val	Thr	Val	Gly	Lys	Phe	Tyr	Ala
	1655					1660					1665			
Thr	Phe	Leu	Ile	Gln	Glu	Tyr	Phe	Arg	Lys	Phe	Lys	Lys	Arg	Lys
	1670					1675					1680			
Glu	Gln	Gly	Leu	Val	Gly	Lys	Pro	Ser	Gln	Arg	Asn	Ala	Leu	Ser
	1685					1690					1695			
Leu	Gln	Ala	Gly	Leu	Arg	Thr	Leu	His	Asp	Ile	Gly	Pro	Glu	Ile
	1700					1705					1710			
Arg	Arg	Ala	Ile	Ser	Gly	Asp	Leu	Thr	Ala	Glu	Glu	Glu	Leu	Asp
	1715					1720					1725			
Lys	Ala	Met	Lys	Glu	Ala	Val	Ser	Ala	Ala	Ser	Glu	Asp	Asp	Ile
	1730					1735					1740			
Phe	Arg	Arg	Ala	Gly	Gly	Leu	Phe	Gly	Asn	His	Val	Ser	Tyr	Tyr
	1745					1750					1755			
Gln	Ser	Asp	Gly	Arg	Ser	Ala	Phe	Pro	Gln	Thr	Phe	Thr	Thr	Gln
	1760					1765					1770			
Arg	Pro	Leu	His	Ile	Asn	Lys	Ala	Gly	Ser	Ser	Gln	Gly	Asp	Thr
	1775					1780					1785			
Glu	Ser	Pro	Ser	His	Glu	Lys	Leu	Val	Asp	Ser	Thr	Phe	Thr	Pro
	1790					1795					1800			
Ser	Ser	Tyr	Ser	Ser	Thr	Gly	Ser	Asn	Ala	Asn	Ile	Asn	Asn	Ala
	1805					1810					1815			
Asn	Asn	Thr	Ala	Leu	Gly	Arg	Leu	Pro	Arg	Pro	Ala	Gly	Tyr	Pro
	1820					1825					1830			
Ser	Thr	Val	Ser	Thr	Val	Glu	Gly	His	Gly	Pro	Pro	Leu	Ser	Pro

1835	1840										
Ala Ile 1850	Arg Val Gln Glu Val 1855	Ala Trp Lys Leu Ser 1860	Ser Asn Arg								
Glu Arg 1865	His Val Pro Val Cys 1870	Glu Asp Leu Glu Leu 1875	Arg Arg Asp								
Ser Gly 1880	Ser Ala Gly Thr Gln 1885	Ala His Cys Leu Leu 1890	Leu Arg Arg								
Ala Asn 1895	Pro Ser Arg Cys His 1900	Ser Arg Glu Ser Gln 1905	Ala Ala Met								
Ala Gly 1910	Gln Glu Glu Thr Ser 1915	Gln Asp Glu Thr Tyr 1920	Glu Val Lys								
Met Asn 1925	His Asp Thr Glu Ala 1930	Cys Ser Glu Pro Ser 1935	Leu Leu Ser								
Thr Glu 1940	Met Leu Ser Tyr Gln 1945	Asp Asp Glu Asn Arg 1950	Gln Leu Thr								
Leu Pro 1955	Glu Glu Asp Lys Arg 1960	Asp Ile Arg Gln Ser 1965	Pro Lys Arg								
Gly Phe 1970	Leu Arg Ser Ala Ser 1975	Leu Gly Arg Arg Ala 1980	Ser Phe His								
Leu Glu 1985	Cys Leu Lys Arg Gln 1990	Lys Asp Arg Gly Gly 1995	Asp Ile Ser								
Gln Lys 2000	Thr Val Leu Pro Leu 2005	His Leu Val His His 2010	Gln Ala Leu								
Ala Val 2015	Ala Gly Leu Ser Pro 2020	Leu Leu Gln Arg Ser 2025	His Ser Pro								
Ala Ser 2030	Phe Pro Arg Pro Phe 2035	Ala Thr Pro Pro Ala 2040	Thr Pro Gly								
Ser Arg 2045	Gly Trp Pro Pro Gln 2050	Pro Val Pro Thr Leu 2055	Arg Leu Glu								
Gly Val 2060	Glu Ser Ser Glu Lys 2065	Leu Asn Ser Ser Phe 2070	Pro Ser Ile								

His Cys Gly Ser Trp Ala Glu Thr Thr Pro Gly Gly Gly Gly Ser
2075 2080 2085

Ser Ala Ala Arg Arg Val Arg Pro Val Ser Leu Met Val Pro Ser
2090 2095 2100

Gln Ala Gly Ala Pro Gly Arg Gln Phe His Gly Ser Ala Ser Ser
2105 2110 2115

Leu Val Glu Ala Val Leu Ile Ser Glu Gly Leu Gly Gln Phe Ala
2120 2125 2130

Gln Asp Pro Lys Phe Ile Glu Val Thr Thr Gln Glu Leu Ala Asp
2135 2140 2145

Ala Cys Asp Met Thr Ile Glu Glu Met Glu Ser Ala Ala Asp Asn
2150 2155 2160

Ile Leu Ser Gly Gly Ala Pro Gln Ser Pro Asn Gly Ala Leu Leu
2165 2170 2175

Pro Phe Val Asn Cys Arg Asp Ala Gly Gln Asp Arg Ala Gly Gly
2180 2185 2190

Glu Glu Asp Ala Gly Cys Val Arg Ala Arg Gly Ala Pro Ser Glu
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Glu Glu Leu Gln Asp Ser Arg Val Tyr Val Ser Ser Leu
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<211> 2161

<212> PRT

<213> Homo sapiens

<400> 4

Met Met Met Met Met Met Met Lys Lys Met Gln His Gln Arg Gln Gln
1 5 10 15

Gln Ala Asp His Ala Asn Glu Ala Asn Tyr Ala Arg Gly Thr Arg Leu
20 25 30

Pro Leu Ser Gly Glu Gly Pro Thr Ser Gln Pro Asn Ser Ser Lys Gln
35 40 45

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Thr Val Leu Ser Trp Gln Ala Ala Ile Asp Ala Ala Arg Gln Ala Lys
50 55 60

Ala Ala Gln Thr Met Ser Thr Ser Ala Pro Pro Pro Val Gly Ser Leu
65 70 75 80

Ser Gln Arg Lys Arg Gln Gln Tyr Ala Lys Ser Lys Lys Gln Gly Asn
85 90 95

Ser Ser Asn Ser Arg Pro Ala Arg Ala Leu Phe Cys Leu Ser Leu Asn
100 105 110

Asn Pro Ile Arg Arg Ala Cys Ile Ser Ile Val Glu Trp Lys Pro Phe
115 120 125

Asp Ile Phe Ile Leu Leu Ala Ile Phe Ala Asn Cys Val Ala Leu Ala
130 135 140

Ile Tyr Ile Pro Phe Pro Glu Asp Asp Ser Asn Ser Thr Asn His Asn
145 150 155 160

Leu Glu Lys Val Glu Tyr Ala Phe Leu Ile Ile Phe Thr Val Glu Thr
165 170 175

Phe Leu Lys Ile Ile Ala Tyr Gly Leu Leu Leu His Pro Asn Ala Tyr
180 185 190

Val Arg Asn Gly Trp Asn Leu Leu Asp Phe Val Ile Val Ile Val Gly
195 200 205

Leu Phe Ser Val Ile Leu Glu Gln Leu Thr Lys Glu Thr Glu Gly Gly
210 215 220

Asn His Ser Ser Gly Lys Ser Gly Gly Phe Asp Val Lys Ala Leu Arg
225 230 235 240

Ala Phe Arg Val Leu Arg Pro Leu Arg Leu Val Ser Gly Val Pro Ser
245 250 255

Leu Gln Val Val Leu Asn Ser Ile Ile Lys Ala Met Val Pro Leu Leu
260 265 270

His Ile Ala Leu Leu Val Leu Phe Val Ile Ile Ile Tyr Ala Ile Ile
275 280 285

Gly Leu Glu Leu Phe Ile Gly Lys Met His Lys Thr Cys Phe Phe Ala
290 295 300

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Asp Ser Asp Ile Val Ala Glu Glu Asp Pro Ala Pro Cys Ala Phe Ser
305 310 315 320

Gly Asn Gly Arg Gln Cys Thr Ala Asn Gly Thr Glu Cys Arg Ser Gly
325 330 335

Trp Val Gly Pro Asn Gly Gly Ile Thr Asn Phe Asp Asn Phe Ala Phe
340 345 350

Ala Met Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Asp
355 360 365

Val Leu Tyr Trp Met Asn Asp Ala Met Gly Phe Glu Leu Pro Trp Val
370 375 380

Tyr Phe Val Ser Leu Val Ile Phe Gly Ser Phe Phe Val Leu Asn Leu
385 390 395 400

Val Leu Gly Val Leu Ser Gly Glu Phe Ser Lys Glu Arg Glu Lys Ala
405 410 415

Lys Ala Arg Gly Asp Phe Gln Lys Leu Arg Glu Lys Gln Gln Leu Glu
420 425 430

Glu Asp Leu Lys Gly Tyr Leu Asp Trp Ile Thr Gln Ala Glu Asp Ile
435 440 445

Asp Pro Glu Asn Glu Glu Glu Gly Gly Glu Glu Gly Lys Arg Asn Thr
450 455 460

Ser Met Pro Thr Ser Glu Thr Glu Ser Val Asn Thr Glu Asn Val Ser
465 470 475 480

Gly Glu Gly Glu Asn Arg Gly Cys Cys Gly Ser Leu Cys Gln Ala Ile
485 490 495

Ser Lys Ser Lys Leu Ser Arg Arg Trp Arg Arg Trp Asn Arg Phe Asn
500 505 510

Arg Arg Arg Cys Arg Ala Ala Val Lys Ser Val Thr Phe Tyr Trp Leu
515 520 525

Val Ile Val Leu Val Phe Leu Asn Thr Leu Thr Ile Ser Ser Glu His
530 535 540

Tyr Asn Gln Pro Asp Trp Leu Thr Gln Ile Gln Asp Ile Ala Asn Lys
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545 550 555 560
 Val Leu Leu Ala Leu Phe Thr Cys Glu Met Leu Val Lys Met Tyr Ser
 565 570 575
 Leu Gly Leu Gln Ala Tyr Phe Val Ser Leu Phe Asn Arg Phe Asp Cys
 580 585 590
 Phe Val Val Cys Gly Gly Ile Thr Glu Thr Ile Leu Val Glu Leu Glu
 595 600 605
 Ile Met Ser Pro Leu Gly Ile Ser Val Phe Arg Cys Val Arg Leu Leu
 610 615 620
 Arg Ile Phe Lys Val Thr Arg His Trp Thr Ser Leu Cys Asn Leu Val
 625 630 635 640
 Ala Ser Leu Leu Asn Ser Met Lys Ser Ser Ala Ser Leu Leu Leu Leu
 645 650 655
 Leu Phe Leu Phe Ile Ile Ile Phe Ser Leu Leu Gly Met Gln Leu Phe
 660 665 670
 Gly Gly Lys Phe Asn Phe Asp Glu Thr Gln Thr Lys Arg Ser Thr Phe
 675 680 685
 Asp Asn Phe Pro Gln Ala Leu Leu Thr Val Phe Gln Ile Leu Thr Gly
 690 695 700
 Glu Asp Trp Asn Ala Val Met Tyr Asp Gly Ile Met Ala Tyr Gly Gly
 705 710 715 720
 Pro Ser Ser Ser Gly Met Ile Val Cys Ile Tyr Phe Ile Ile Leu Phe
 725 730 735
 Ile Cys Gly Asn Tyr Ile Leu Leu Asn Val Phe Leu Ala Ile Ala Val
 740 745 750
 Asp Asn Leu Ala Asp Ala Glu Ser Leu Asn Thr Ala Gln Lys Glu Glu
 755 760 765
 Ala Glu Glu Lys Glu Arg Lys Lys Ile Ala Arg Lys Glu Ser Leu Glu
 770 775 780
 Asn Lys Lys Asn Asn Lys Pro Glu Val Asn Gln Ile Ala Asn Ser Asp
 785 790 795 800

Asn Lys Val Thr Ile Asp Asp Tyr Arg Glu Glu Asp Glu Asp Lys Asp
 805 810 815
 Pro Tyr Pro Pro Cys Asp Val Pro Val Gly Glu Glu Glu Glu Glu Glu
 820 825 830
 Glu Glu Asp Glu Pro Glu Val Pro Ala Gly Pro Arg Pro Arg Arg Ile
 835 840 845
 Ser Glu Leu Asn Met Lys Glu Lys Ile Ala Pro Ile Pro Glu Gly Ser
 850 855 860
 Ala Phe Phe Ile Leu Ser Lys Thr Asn Pro Ile Arg Val Gly Cys His
 865 870 875 880
 Lys Leu Ile Asn His His Ile Phe Thr Asn Leu Ile Leu Val Phe Ile
 885 890 895
 Met Leu Ser Ser Ala Ala Leu Ala Ala Glu Asp Pro Ile Arg Ser His
 900 905 910
 Ser Phe Arg Asn Thr Ile Leu Gly Tyr Phe Asp Tyr Ala Phe Thr Ala
 915 920 925
 Ile Phe Thr Val Glu Ile Leu Leu Lys Met Thr Thr Phe Gly Ala Phe
 930 935 940
 Leu His Lys Gly Ala Phe Cys Arg Asn Tyr Phe Asn Leu Leu Asp Met
 945 950 955 960
 Leu Val Val Gly Val Ser Leu Val Ser Phe Gly Ile Gln Ser Ser Ala
 965 970 975
 Ile Ser Val Val Lys Ile Leu Arg Val Leu Arg Val Leu Arg Pro Leu
 980 985 990
 Arg Ala Ile Asn Arg Ala Lys Gly Leu Lys His Val Val Gln Cys Val
 995 1000 1005
 Phe Val Ala Ile Arg Thr Ile Gly Asn Ile Met Ile Val Thr Thr
 1010 1015 1020
 Leu Leu Gln Phe Met Phe Ala Cys Ile Gly Val Gln Leu Phe Lys
 1025 1030 1035
 Gly Lys Phe Tyr Arg Cys Thr Asp Glu Ala Lys Ser Asn Pro Glu
 1040 1045 1050

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Glu Cys Arg Gly Leu Phe Ile Leu Tyr Lys Asp Gly Asp Val Asp
 1055 1060 1065
 Ser Pro Val Val Arg Glu Arg Ile Trp Gln Asn Ser Asp Phe Asn
 1070 1075 1080
 Phe Asp Asn Val Leu Ser Ala Met Met Ala Leu Phe Thr Val Ser
 1085 1090 1095
 Thr Phe Glu Gly Trp Pro Ala Leu Leu Tyr Lys Ala Ile Asp Ser
 1100 1105 1110
 Asn Gly Glu Asn Ile Gly Pro Ile Tyr Asn His Arg Val Glu Ile
 1115 1120 1125
 Ser Ile Phe Phe Ile Ile Tyr Ile Ile Ile Val Ala Phe Phe Met
 1130 1135 1140
 Met Asn Ile Phe Val Gly Phe Val Ile Val Thr Phe Gln Glu Gln
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 Gly Glu Lys Glu Tyr Lys Asn Cys Glu Leu Asp Lys Asn Gln Arg
 1160 1165 1170
 Gln Cys Val Glu Tyr Ala Leu Lys Ala Arg Pro Leu Arg Arg Tyr
 1175 1180 1185
 Ile Pro Lys Asn Pro Tyr Gln Tyr Lys Phe Trp Tyr Val Val Asn
 1190 1195 1200
 Ser Ser Pro Phe Glu Tyr Met Met Phe Val Leu Ile Met Leu Asn
 1205 1210 1215
 Thr Leu Cys Leu Ala Met Gln His Tyr Glu Gln Ser Lys Met Phe
 1220 1225 1230
 Asn Asp Ala Met Asp Ile Leu Asn Met Val Phe Thr Gly Val Phe
 1235 1240 1245
 Thr Val Glu Met Val Leu Lys Val Ile Ala Phe Lys Pro Lys Gly
 1250 1255 1260
 Tyr Phe Ser Asp Ala Trp Asn Thr Phe Asp Ser Leu Ile Val Ile
 1265 1270 1275
 Gly Ser Ile Ile Asp Val Ala Leu Ser Glu Ala Asp Pro Thr Glu
 1280 1285 1290

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Ser Glu Asn Val Pro Val Pro Thr Ala Thr Pro Gly Asn Ser Glu
1295 1300 1305

Glu Ser Asn Arg Ile Ser Ile Thr Phe Phe Arg Leu Phe Arg Val
1310 1315 1320

Met Arg Leu Val Lys Leu Leu Ser Arg Gly Glu Gly Ile Arg Thr
1325 1330 1335

Leu Leu Trp Thr Phe Ile Lys Phe Phe Gln Ala Leu Pro Tyr Val
1340 1345 1350

Ala Leu Leu Ile Ala Met Leu Phe Phe Ile Tyr Ala Val Ile Gly
1355 1360 1365

Met Gln Met Phe Gly Lys Val Ala Met Arg Asp Asn Asn Gln Ile
1370 1375 1380

Asn Arg Asn Asn Asn Phe Gln Thr Phe Pro Gln Ala Val Leu Leu
1385 1390 1395

Leu Phe Arg Cys Ala Thr Gly Glu Ala Trp Gln Glu Ile Met Leu
1400 1405 1410

Ala Cys Leu Pro Gly Lys Leu Cys Asp Pro Glu Ser Asp Tyr Asn
1415 1420 1425

Pro Gly Glu Glu His Thr Cys Gly Ser Asn Phe Ala Ile Val Tyr
1430 1435 1440

Phe Ile Ser Phe Tyr Met Leu Cys Ala Phe Leu Ile Ile Asn Leu
1445 1450 1455

Phe Val Ala Val Ile Met Asp Asn Phe Asp Tyr Leu Thr Arg Asp
1460 1465 1470

Trp Ser Ile Leu Gly Pro His His Leu Asp Glu Phe Lys Arg Ile
1475 1480 1485

Trp Ser Glu Tyr Asp Pro Glu Ala Lys Gly Arg Ile Lys His Leu
1490 1495 1500

Asp Val Val Thr Leu Leu Arg Arg Ile Gln Pro Pro Leu Gly Phe
1505 1510 1515

Gly Lys Leu Cys Pro His Arg Val Ala Cys Lys Arg Leu Val Ala

1520	Met Asn 1535	Met Pro Leu Asn 1540	Ser 1540	Asp Gly Thr Val	Met 1545	Phe Asn Ala
Thr Leu 1550	Phe Ala Leu Val	Arg 1555	Thr Ala Leu Lys	Ile 1560	Lys Thr Glu	
Gly Asn 1565	Leu Glu Gln Ala	Asn 1570	Glu Glu Leu Arg	Ala 1575	Val Ile Lys	
Lys Ile 1580	Trp Lys Lys Thr	Ser 1585	Met Lys Leu Leu	Asp 1590	Gln Val Val	
Pro Pro 1595	Ala Gly Asp Asp	Glu 1600	Val Thr Val Gly	Lys 1605	Phe Tyr Ala	
Thr Phe 1610	Leu Ile Gln Asp	Tyr 1615	Phe Arg Lys Phe	Lys 1620	Lys Arg Lys	
Glu Gln 1625	Gly Leu Val Gly	Lys 1630	Tyr Pro Ala Lys	Asn 1635	Thr Thr Ile	
Ala Leu 1640	Gln Ala Gly Leu	Arg 1645	Thr Leu His Asp	Ile 1650	Gly Pro Glu	
Ile Arg 1655	Arg Ala Ile Ser	Cys 1660	Asp Leu Gln Asp	Asp 1665	Glu Pro Glu	
Glu Thr 1670	Lys Arg Glu Glu	Glu 1675	Asp Asp Val Phe	Lys 1680	Arg Asn Gly	
Ala Leu 1685	Leu Gly Asn His	Val 1690	Asn His Val Asn	Ser 1695	Asp Arg Arg	
Asp Ser 1700	Leu Gln Gln Thr	Asn 1705	Thr Thr His Arg	Pro 1710	Leu His Val	
Gln Arg 1715	Pro Ser Ile Pro	Pro 1720	Ala Ser Asp Thr	Glu 1725	Lys Pro Leu	
Phe Pro 1730	Pro Ala Gly Asn	Ser 1735	Val Cys His Asn	His 1740	His Asn His	
Asn Ser 1745	Ile Gly Lys Gln	Val 1750	Pro Thr Ser Thr	Asn 1755	Ala Asn Leu	

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Asn	Asn	Ala	Asn	Met	Ser	Lys	Ala	Ala	His	Gly	Lys	Arg	Pro	Ser
1760						1765					1770			
Ile	Gly	Asn	Leu	Glu	His	Val	Ser	Glu	Asn	Gly	His	His	Ser	Ser
1775						1780					1785			
His	Lys	His	Asp	Arg	Glu	Pro	Gln	Arg	Arg	Ser	Ser	Val	Lys	Arg
1790						1795					1800			
Thr	Arg	Tyr	Tyr	Glu	Thr	Tyr	Ile	Arg	Ser	Asp	Ser	Gly	Asp	Glu
1805						1810					1815			
Gln	Leu	Pro	Thr	Ile	Cys	Arg	Glu	Asp	Pro	Glu	Ile	His	Gly	Tyr
1820						1825					1830			
Phe	Arg	Asp	Pro	His	Cys	Leu	Gly	Glu	Gln	Glu	Tyr	Phe	Ser	Ser
1835						1840					1845			
Glu	Glu	Cys	Tyr	Glu	Asp	Asp	Ser	Ser	Pro	Thr	Trp	Ser	Arg	Gln
1850						1855					1860			
Asn	Tyr	Gly	Tyr	Tyr	Ser	Arg	Tyr	Pro	Gly	Arg	Asn	Ile	Asp	Ser
1865						1870					1875			
Glu	Arg	Pro	Arg	Gly	Tyr	His	His	Pro	Gln	Gly	Phe	Leu	Glu	Asp
1880						1885					1890			
Asp	Asp	Ser	Pro	Val	Cys	Tyr	Asp	Ser	Arg	Arg	Ser	Pro	Arg	Arg
1895						1900					1905			
Arg	Leu	Leu	Pro	Pro	Thr	Pro	Ala	Ser	His	Arg	Arg	Ser	Ser	Phe
1910						1915					1920			
Asn	Phe	Glu	Cys	Leu	Arg	Arg	Gln	Ser	Ser	Gln	Glu	Glu	Val	Pro
1925						1930					1935			
Ser	Ser	Pro	Ile	Phe	Pro	His	Arg	Thr	Ala	Leu	Pro	Leu	His	Leu
1940						1945					1950			
Met	Gln	Gln	Gln	Ile	Met	Ala	Val	Ala	Gly	Leu	Asp	Ser	Ser	Lys
1955						1960					1965			
Ala	Gln	Lys	Tyr	Ser	Pro	Ser	His	Ser	Thr	Arg	Ser	Trp	Ala	Thr
1970						1975					1980			
Pro	Pro	Ala	Thr	Pro	Pro	Tyr	Arg	Asp	Trp	Thr	Pro	Cys	Tyr	Thr
1985						1990					1995			

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Pro Leu Ile Gln Val Glu Gln Ser Glu Ala Leu Asp Gln Val Asn
 2000 2005 2010

Gly Ser Leu Pro Ser Leu His Arg Ser Ser Trp Tyr Thr Asp Glu
 2015 2020 2025

Pro Asp Ile Ser Tyr Arg Thr Phe Thr Pro Ala Ser Leu Thr Val
 2030 2035 2040

Pro Ser Ser Phe Arg Asn Lys Asn Ser Asp Lys Gln Arg Ser Ala
 2045 2050 2055

Asp Ser Leu Val Glu Ala Val Leu Ile Ser Glu Gly Leu Gly Arg
 2060 2065 2070

Tyr Ala Arg Asp Pro Lys Phe Val Ser Ala Thr Lys His Glu Ile
 2075 2080 2085

Ala Asp Ala Cys Asp Leu Thr Ile Asp Glu Met Glu Ser Ala Ala
 2090 2095 2100

Ser Thr Leu Leu Asn Gly Asn Val Arg Pro Arg Ala Asn Gly Asp
 2105 2110 2115

Val Gly Pro Leu Ser His Arg Gln Asp Tyr Glu Leu Gln Asp Phe
 2120 2125 2130

Gly Pro Gly Tyr Ser Asp Glu Glu Pro Asp Pro Gly Arg Asp Glu
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Glu Asp Leu Ala Asp Glu Met Ile Cys Ile Thr Thr Leu
 2150 2155 2160

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<211> 1966

<212> PRT

<213> Homo sapiens

<400> 5

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Ala Asn Gly Ala Gly Pro Gly Pro Glu Trp Gly Leu Cys Pro Gly Pro
 20 25 30

pha4262.ST25.txt

Pro Ala Val Glu Gly Glu Ser Ser Gly Ala Ser Gly Leu Gly Thr Pro
35 40 45

Lys Arg Arg Asn Gln His Ser Lys His Lys Thr Val Ala Val Ala Ser
50 55 60

Ala Gln Arg Ser Pro Arg Ala Leu Phe Cys Leu Thr Leu Ala Asn Pro
65 70 75 80

Leu Arg Arg Ser Cys Ile Ser Ile Val Glu Trp Lys Pro Phe Asp Ile
85 90 95

Leu Ile Leu Leu Thr Ile Phe Ala Asn Cys Val Ala Leu Gly Val Tyr
100 105 110

Ile Pro Phe Pro Glu Asp Asp Ser Asn Thr Ala Asn His Asn Leu Glu
115 120 125

Gln Val Glu Tyr Val Phe Leu Val Ile Phe Thr Val Glu Thr Val Leu
130 135 140

Lys Ile Val Ala Tyr Gly Leu Val Leu His Pro Ser Ala Tyr Ile Arg
145 150 155 160

Asn Gly Trp Asn Leu Leu Asp Phe Ile Ile Val Val Val Gly Leu Phe
165 170 175

Ser Val Leu Leu Glu Gln Gly Pro Gly Arg Pro Gly Asp Ala Pro His
180 185 190

Thr Gly Gly Lys Pro Gly Gly Phe Asp Val Lys Ala Leu Arg Ala Phe
195 200 205

Arg Val Leu Arg Pro Leu Arg Leu Val Ser Gly Val Pro Ser Leu His
210 215 220

Ile Val Leu Asn Ser Ile Met Lys Ala Leu Val Pro Leu Leu His Ile
225 230 235 240

Ala Leu Leu Val Leu Phe Val Ile Ile Ile Tyr Ala Ile Ile Gly Leu
245 250 255

Glu Leu Phe Leu Gly Arg Met His Lys Thr Cys Tyr Phe Leu Gly Ser
260 265 270

Asp Met Glu Ala Glu Glu Asp Pro Ser Pro Cys Ala Ser Ser Gly Ser
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280

Gly Arg Ala Cys Thr Leu Asn Gln Thr Glu Cys Arg Gly Arg Trp Pro
290 295 300

Gly Pro Asn Gly Gly Ile Thr Asn Phe Asp Asn Phe Phe Phe Ala Met
305 310 315 320

Leu Thr Val Phe Gln Cys Val Thr Met Glu Gly Trp Thr Asp Val Leu
325 330 335

Tyr Trp Met Gln Asp Ala Met Gly Tyr Glu Leu Pro Trp Val Tyr Phe
340 345 350

Val Ser Leu Val Ile Phe Gly Ser Phe Phe Val Leu Asn Leu Val Leu
355 360 365

Gly Val Leu Ser Gly Glu Phe Ser Lys Glu Arg Glu Lys Ala Lys Ala
370 375 380

Arg Gly Asp Phe Gln Lys Gln Arg Glu Lys Gln Gln Met Glu Glu Asp
385 390 395 400

Leu Arg Gly Tyr Leu Asp Trp Ile Thr Gln Ala Glu Glu Leu Asp Met
405 410 415

Glu Asp Pro Ser Ala Asp Asp Asn Leu Gly Pro Gln Leu Ala Glu Leu
420 425 430

Thr Asn Arg Arg Arg Gly Arg Leu Arg Trp Phe Ser His Ser Thr Arg
435 440 445

Ser Thr His Ser Thr Ser Ser His Ala Ser Leu Pro Ala Ser Asp Thr
450 455 460

Gly Ser Met Thr Glu Thr Gln Gly Asp Glu Asp Glu Glu Glu Gly Ala
465 470 475 480

Leu Ala Ser Cys Thr Arg Cys Leu Asn Lys Ile Met Lys Thr Arg Val
485 490 495

Cys Arg Arg Leu Arg Arg Ala Asn Arg Val Leu Arg Ala Arg Cys Arg
500 505 510

Arg Ala Val Lys Ser Asn Ala Cys Tyr Trp Ala Val Leu Leu Leu Val
515 520 525

Phe Leu Asn Thr Leu Thr Ile Ala Ser Glu His His Gly Gln Pro Val
 530 535 540

Trp Leu Thr Gln Ile Gln Glu Tyr Ala Asn Lys Val Leu Leu Cys Leu
 545 550 555 560

Phe Thr Val Glu Met Leu Leu Lys Leu Tyr Gly Leu Gly Pro Ser Ala
 565 570 575

Tyr Val Ser Ser Phe Phe Asn Arg Phe Asp Cys Phe Val Val Cys Gly
 580 585 590

Gly Ile Leu Glu Thr Thr Leu Val Glu Val Gly Ala Met Gln Pro Leu
 595 600 605

Gly Ile Ser Val Leu Arg Cys Val Arg Leu Leu Arg Ile Phe Lys Val
 610 615 620

Thr Arg His Trp Ala Ser Leu Ser Asn Leu Val Ala Ser Leu Leu Asn
 625 630 635 640

Ser Met Lys Ser Ile Ala Ser Leu Leu Leu Leu Leu Phe Leu Phe Ile
 645 650 655

Ile Ile Phe Ser Leu Leu Gly Met Gln Leu Phe Gly Gly Lys Phe Asn
 660 665 670

Phe Asp Gln Thr His Thr Lys Arg Ser Thr Phe Asp Thr Phe Pro Gln
 675 680 685

Ala Leu Leu Thr Val Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Val
 690 695 700

Val Met Tyr Asp Gly Ile Met Ala Tyr Gly Gly Pro Phe Phe Pro Gly
 705 710 715 720

Met Leu Val Cys Ile Tyr Phe Ile Ile Leu Phe Ile Cys Gly Asn Tyr
 725 730 735

Ile Leu Leu Asn Val Phe Leu Ala Ile Ala Val Asp Asn Leu Ala Ser
 740 745 750

Gly Asp Ala Gly Thr Ala Lys Asp Lys Gly Gly Glu Lys Ser Asn Glu
 755 760 765

Lys Asp Leu Pro Gln Glu Asn Glu Gly Leu Val Pro Gly Val Glu Lys
 770 775 780

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Glu Glu Glu Glu Gly Ala Arg Arg Glu Gly Ala Asp Met Glu Glu Glu
 785 790 795 800
 Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Gly Ala
 805 810 815
 Gly Gly Val Glu Leu Leu Gln Glu Val Val Pro Lys Glu Lys Val Val
 820 825 830
 Pro Ile Pro Glu Gly Ser Ala Phe Phe Cys Leu Ser Gln Thr Asn Pro
 835 840 845
 Leu Arg Lys Gly Cys His Thr Leu Ile His His His Val Phe Thr Asn
 850 855 860
 Leu Ile Leu Val Phe Ile Ile Leu Ser Ser Val Ser Leu Ala Ala Glu
 865 870 875 880
 Asp Pro Ile Arg Ala His Ser Phe Arg Asn His Ile Leu Gly Tyr Phe
 885 890 895
 Asp Tyr Ala Phe Thr Ser Ile Phe Thr Val Glu Ile Leu Leu Lys Met
 900 905 910
 Thr Val Phe Gly Ala Phe Leu His Arg Gly Ser Phe Cys Arg Ser Trp
 915 920 925
 Phe Asn Met Leu Asp Leu Leu Val Val Ser Val Ser Leu Ile Ser Phe
 930 935 940
 Gly Ile His Ser Ser Ala Ile Ser Val Val Lys Ile Leu Arg Val Leu
 945 950 955 960
 Arg Val Leu Arg Pro Leu Arg Ala Ile Asn Arg Ala Lys Gly Leu Lys
 965 970 975
 His Val Val Gln Cys Val Phe Val Ala Ile Arg Thr Ile Gly Asn Ile
 980 985 990
 Met Ile Val Thr Thr Leu Leu Gln Phe Met Phe Ala Cys Ile Gly Val
 995 1000 1005
 Gln Leu Phe Lys Gly Lys Phe Tyr Thr Cys Thr Asp Glu Ala Lys
 1010 1015 1020
 His Thr Pro Gln Glu Cys Lys Gly Ser Phe Leu Val Tyr Pro Asp
 1025 1030 1035

pha4262.ST25.txt

Gly	Asp	Val	Ser	Arg	Pro	Leu	Val	Arg	Glu	Arg	Leu	Trp	Val	Asn
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Ser	Asp	Phe	Asn	Phe	Asp	Asn	Val	Leu	Ser	Ala	Met	Met	Ala	Leu
	1055					1060					1065			
Phe	Thr	Val	Ser	Thr	Phe	Glu	Gly	Trp	Pro	Ala	Leu	Leu	Tyr	Lys
	1070					1075					1080			
Ala	Ile	Asp	Ala	Tyr	Ala	Glu	Asp	His	Gly	Pro	Ile	Tyr	Asn	Tyr
	1085					1090					1095			
Arg	Val	Glu	Ile	Ser	Val	Phe	Phe	Ile	Val	Tyr	Ile	Ile	Ile	Ile
	1100					1105					1110			
Ala	Phe	Phe	Met	Met	Asn	Ile	Phe	Val	Gly	Phe	Val	Ile	Ile	Thr
	1115					1120					1125			
Phe	Arg	Ala	Gln	Gly	Glu	Gln	Glu	Tyr	Gln	Asn	Cys	Glu	Leu	Asp
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Lys	Asn	Gln	Arg	Gln	Cys	Val	Glu	Tyr	Ala	Leu	Lys	Ala	Gln	Pro
	1145					1150					1155			
Leu	Arg	Arg	Tyr	Ile	Pro	Lys	Asn	Pro	His	Gln	Tyr	Arg	Val	Trp
	1160					1165					1170			
Ala	Thr	Val	Asn	Ser	Ala	Ala	Phe	Glu	Tyr	Leu	Met	Phe	Leu	Leu
	1175					1180					1185			
Ile	Leu	Leu	Asn	Thr	Val	Ala	Leu	Ala	Met	Gln	His	Tyr	Glu	Gln
	1190					1195					1200			
Thr	Ala	Pro	Phe	Asn	Tyr	Ala	Met	Asp	Ile	Leu	Asn	Met	Val	Phe
	1205					1210					1215			
Thr	Gly	Leu	Phe	Thr	Ile	Glu	Met	Val	Leu	Lys	Ile	Ile	Ala	Phe
	1220					1225					1230			
Lys	Pro	Lys	His	Tyr	Phe	Thr	Asp	Ala	Trp	Asn	Thr	Phe	Asp	Ala
	1235					1240					1245			
Leu	Ile	Val	Val	Gly	Ser	Ile	Val	Asp	Ile	Ala	Val	Thr	Glu	Val
	1250					1255					1260			
Asn	Asn	Gly	Gly	His	Leu	Gly	Glu	Ser	Ser	Glu	Asp	Ser	Ser	Arg

1265		1270		1275	
Ile Ser	Ile Thr Phe Phe	Arg	Leu Phe Arg Val	Met	Arg Leu Val
1280		1285		1290	
Lys Leu	Leu Ser Lys Gly	Glu	Gly Ile Arg Thr	Leu	Leu Trp Thr
1295		1300		1305	
Phe Ile	Lys Ser Phe Gln	Ala	Leu Pro Tyr Val	Ala	Leu Leu Ile
1310		1315		1320	
Ala Met	Ile Phe Phe Ile	Tyr	Ala Val Ile Gly	Met	Gln Met Phe
1325		1330		1335	
Gly Lys	Val Ala Leu Gln	Asp	Gly Thr Gln Ile	Asn	Arg Asn Asn
1340		1345		1350	
Asn Phe	Gln Thr Phe Pro	Gln	Ala Val Leu Leu	Leu	Phe Arg Cys
1355		1360		1365	
Ala Thr	Gly Glu Ala Trp	Gln	Glu Ile Met Leu	Ala	Ser Leu Pro
1370		1375		1380	
Gly Asn	Arg Cys Asp Pro	Glu	Ser Asp Phe Gly	Pro	Gly Glu Glu
1385		1390		1395	
Phe Thr	Cys Gly Ser Asn	Phe	Ala Ile Ala Tyr	Phe	Ile Ser Phe
1400		1405		1410	
Phe Met	Leu Cys Ala Phe	Leu	Ile Ile Asn Leu	Phe	Val Ala Val
1415		1420		1425	
Ile Met	Asp Asn Phe Asp	Tyr	Leu Thr Arg Asp	Trp	Ser Ile Leu
1430		1435		1440	
Gly Pro	His His Leu Asp	Glu	Phe Lys Arg Ile	Trp	Ser Glu Tyr
1445		1450		1455	
Asp Pro	Gly Ala Lys Gly	Arg	Ile Lys His Leu	Asp	Val Val Ala
1460		1465		1470	
Leu Leu	Arg Arg Ile Gln	Pro	Pro Leu Gly Phe	Gly	Lys Leu Cys
1475		1480		1485	
Pro His	Arg Val Ala Cys	Lys	Arg Leu Val Ala	Met	Asn Met Pro
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 1505 1510 1515
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 1520 1525 1530
 Gln Ala Asn Gln Glu Leu Arg Ile Val Ile Lys Lys Ile Trp Lys
 1535 1540 1545
 Arg Met Lys Gln Lys Leu Leu Asp Glu Val Ile Pro Pro Pro Asp
 1550 1555 1560
 Glu Glu Glu Val Thr Val Gly Lys Phe Tyr Ala Thr Phe Leu Ile
 1565 1570 1575
 Gln Asp Tyr Phe Arg Lys Phe Arg Arg Arg Lys Glu Lys Gly Leu
 1580 1585 1590
 Leu Gly Asn Asp Ala Ala Pro Ser Thr Ser Ser Ala Leu Gln Ala
 1595 1600 1605
 Gly Leu Arg Ser Leu Gln Asp Leu Gly Pro Glu Met Arg Gln Ala
 1610 1615 1620
 Leu Thr Cys Asp Thr Glu Glu Glu Glu Glu Gly Gln Glu Gly
 1625 1630 1635
 Val Glu Glu Glu Asp Glu Lys Asp Leu Glu Thr Asn Lys Ala Thr
 1640 1645 1650
 Met Val Ser Gln Pro Ser Ala Arg Arg Gly Ser Gly Ile Ser Val
 1655 1660 1665
 Ser Leu Pro Val Gly Asp Arg Leu Pro Asp Ser Leu Ser Phe Gly
 1670 1675 1680
 Pro Ser Asp Asp Asp Arg Gly Thr Pro Thr Ser Ser Gln Pro Ser
 1685 1690 1695
 Val Pro Gln Ala Gly Ser Asn Thr His Arg Arg Gly Ser Gly Ala
 1700 1705 1710
 Leu Ile Phe Thr Ile Pro Glu Glu Gly Asn Ser Gln Pro Lys Gly
 1715 1720 1725
 Thr Lys Gly Gln Asn Lys Gln Asp Glu Asp Glu Glu Val Pro Asp
 1730 1735 1740

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Arg	Leu	Ser	Tyr	Leu	Asp	Glu	Gln	Ala	Gly	Thr	Pro	Pro	Cys	Ser
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Val	Leu	Leu	Pro	Pro	His	Arg	Ala	Gln	Arg	Tyr	Met	Asp	Gly	His
	1760					1765					1770			
Leu	Val	Pro	Arg	Arg	Arg	Leu	Leu	Pro	Pro	Thr	Pro	Ala	Gly	Arg
	1775					1780					1785			
Lys	Pro	Ser	Phe	Thr	Ile	Gln	Cys	Leu	Gln	Arg	Gln	Gly	Ser	Cys
	1790					1795					1800			
Glu	Asp	Leu	Pro	Ile	Pro	Gly	Thr	Tyr	His	Arg	Gly	Arg	Asn	Ser
	1805					1810					1815			
Gly	Pro	Asn	Arg	Ala	Gln	Gly	Ser	Trp	Ala	Thr	Pro	Pro	Gln	Arg
	1820					1825					1830			
Gly	Arg	Leu	Leu	Tyr	Ala	Pro	Leu	Leu	Leu	Val	Glu	Glu	Gly	Ala
	1835					1840					1845			
Ala	Gly	Glu	Gly	Tyr	Leu	Gly	Arg	Ser	Ser	Gly	Pro	Leu	Arg	Thr
	1850					1855					1860			
Phe	Thr	Cys	Leu	His	Val	Pro	Gly	Thr	His	Ser	Asp	Pro	Ser	His
	1865					1870					1875			
Gly	Lys	Arg	Gly	Ser	Ala	Asp	Ser	Leu	Val	Glu	Ala	Val	Leu	Ile
	1880					1885					1890			
Ser	Glu	Gly	Leu	Gly	Leu	Phe	Ala	Arg	Asp	Pro	Arg	Phe	Val	Ala
	1895					1900					1905			
Leu	Ala	Lys	Gln	Glu	Ile	Ala	Asp	Ala	Cys	Arg	Leu	Thr	Leu	Asp
	1910					1915					1920			
Glu	Met	Asp	Asn	Ala	Ala	Ser	Asp	Leu	Leu	Ala	Gln	Gly	Thr	Ser
	1925					1930					1935			
Ser	Leu	Tyr	Ser	Asp	Glu	Glu	Ser	Ile	Leu	Ser	Arg	Phe	Asp	Glu
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<211> 1966

<212> PRT

<213> Homo sapiens

<400> 6

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35 40 45

Lys Arg Arg Asn Gln His Ser Lys His Lys Thr Val Ala Val Ala Ser
50 55 60

Ala Gln Arg Ser Pro Arg Ala Leu Phe Cys Leu Thr Leu Ala Asn Pro
65 70 75 80

Leu Arg Arg Ser Cys Ile Ser Ile Val Glu Trp Lys Pro Phe Asp Ile
85 90 95

Leu Ile Leu Leu Thr Ile Phe Ala Asn Cys Val Ala Leu Gly Val Tyr
100 105 110

Ile Pro Phe Pro Glu Asp Asp Ser Asn Thr Ala Asn His Asn Leu Glu
115 120 125

Gln Val Glu Tyr Val Phe Leu Val Ile Phe Thr Val Glu Thr Val Leu
130 135 140

Lys Ile Val Ala Tyr Gly Leu Val Leu His Pro Ser Ala Tyr Ile Arg
145 150 155 160

Asn Gly Trp Asn Leu Leu Asp Phe Ile Ile Val Val Val Gly Leu Phe
165 170 175

Ser Val Leu Leu Glu Gln Gly Pro Gly Arg Pro Gly Asp Ala Pro His
180 185 190

Thr Gly Gly Lys Pro Gly Gly Phe Asp Val Lys Ala Leu Arg Ala Phe
195 200 205

Arg Val Leu Arg Pro Leu Arg Leu Val Ser Gly Val Pro Ser Leu His
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220

Ile Val Leu Asn Ser Ile Met Lys Ala Leu Val Pro Leu Leu His Ile
 225 230 235 240

Ala Leu Leu Val Leu Phe Val Ile Ile Ile Tyr Ala Ile Ile Gly Leu
 245 250 255

Glu Leu Phe Leu Gly Arg Met His Lys Thr Cys Tyr Phe Leu Gly Ser
 260 265 270

Asp Met Glu Ala Glu Glu Asp Pro Ser Pro Cys Ala Ser Ser Gly Ser
 275 280 285

Gly Arg Ala Cys Thr Leu Asn Gln Thr Glu Cys Arg Gly Arg Trp Pro
 290 295 300

Gly Pro Asn Gly Gly Ile Thr Asn Phe Asp Asn Phe Phe Phe Ala Met
 305 310 315 320

Leu Thr Val Phe Gln Cys Val Thr Met Glu Gly Trp Thr Asp Val Leu
 325 330 335

Tyr Trp Met Gln Asp Ala Met Gly Tyr Glu Leu Pro Trp Val Tyr Phe
 340 345 350

Val Ser Leu Val Ile Phe Gly Ser Phe Phe Val Leu Asn Leu Val Leu
 355 360 365

Gly Val Leu Ser Gly Glu Phe Ser Lys Glu Arg Glu Lys Ala Lys Ala
 370 375 380

Arg Gly Asp Phe Gln Lys Gln Arg Glu Lys Gln Gln Met Glu Glu Asp
 385 390 395 400

Leu Arg Gly Tyr Leu Asp Trp Ile Thr Gln Ala Glu Glu Leu Asp Met
 405 410 415

Glu Asp Pro Ser Ala Asp Asp Asn Leu Gly Pro Gln Leu Ala Glu Leu
 420 425 430

Thr Asn Arg Arg Arg Gly Arg Leu Arg Trp Phe Ser His Ser Thr Arg
 435 440 445

Ser Thr His Ser Thr Ser Ser His Ala Ser Leu Pro Ala Ser Asp Thr
 450 455 460

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Gly Ser Met Thr Glu Thr Gln Gly Asp Glu Asp Glu Glu Glu Gly Ala
465 470 475 480

Leu Ala Ser Cys Thr Arg Cys Leu Asn Lys Ile Met Lys Thr Arg Val
485 490 495

Cys Arg Arg Leu Arg Arg Ala Asn Arg Val Leu Arg Ala Arg Cys Arg
500 505 510

Arg Ala Val Lys Ser Asn Ala Cys Tyr Trp Ala Val Leu Leu Leu Val
515 520 525

Phe Leu Asn Thr Leu Thr Ile Ala Ser Glu His His Gly Gln Pro Val
530 535 540

Trp Leu Thr Gln Ile Gln Glu Tyr Ala Asn Lys Val Leu Leu Cys Leu
545 550 555 560

Phe Thr Val Glu Met Leu Leu Lys Leu Tyr Gly Leu Gly Pro Ser Ala
565 570 575

Tyr Val Ser Ser Phe Phe Asn Arg Phe Asp Cys Phe Val Val Cys Gly
580 585 590

Gly Ile Leu Glu Thr Thr Leu Val Glu Val Gly Ala Met Gln Pro Leu
595 600 605

Gly Ile Ser Val Leu Arg Cys Val Arg Leu Leu Arg Ile Phe Lys Val
610 615 620

Thr Arg His Trp Ala Ser Leu Ser Asn Leu Val Ala Ser Leu Leu Asn
625 630 635 640

Ser Met Lys Ser Ile Ala Ser Leu Leu Leu Leu Leu Phe Leu Phe Ile
645 650 655

Ile Ile Phe Ser Leu Leu Gly Met Gln Leu Phe Gly Gly Lys Phe Asn
660 665 670

Phe Asp Gln Thr His Thr Lys Arg Ser Thr Phe Asp Thr Phe Pro Gln
675 680 685

Ala Leu Leu Thr Val Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Val
690 695 700

Val Met Tyr Asp Gly Ile Met Ala Tyr Gly Gly Pro Phe Phe Pro Gly
705 710 715 720

pha4262.ST25.txt

Met Leu Val Cys Ile Tyr Phe Ile Ile Leu Phe Ile Cys Gly Asn Tyr
725 730 735

Ile Leu Leu Asn Val Phe Leu Ala Ile Ala Val Asp Asn Leu Ala Ser
740 745 750

Gly Asp Ala Gly Thr Ala Lys Asp Lys Gly Gly Glu Lys Ser Asn Glu
755 760 765

Lys Asp Leu Pro Gln Glu Asn Glu Gly Leu Val Pro Gly Val Glu Lys
770 775 780

Glu Glu Glu Glu Gly Ala Arg Arg Glu Gly Ala Asp Met Glu Glu Glu
785 790 795 800

Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Gly Ala
805 810 815

Gly Gly Val Glu Leu Leu Gln Glu Val Val Pro Lys Glu Lys Val Val
820 825 830

Pro Ile Pro Glu Gly Ser Ala Phe Phe Cys Leu Ser Gln Thr Asn Pro
835 840 845

Leu Arg Lys Gly Cys His Thr Leu Ile His His His Val Phe Thr Asn
850 855 860

Leu Ile Leu Val Phe Ile Ile Leu Ser Ser Val Ser Leu Ala Ala Glu
865 870 875 880

Asp Pro Ile Arg Ala His Ser Phe Arg Asn His Ile Leu Gly Tyr Phe
885 890 895

Asp Tyr Ala Phe Thr Ser Ile Phe Thr Val Glu Ile Leu Leu Lys Met
900 905 910

Thr Val Phe Gly Ala Phe Leu His Arg Gly Ser Phe Cys Arg Ser Trp
915 920 925

Phe Asn Met Leu Asp Leu Leu Val Val Ser Val Ser Leu Ile Ser Phe
930 935 940

Gly Ile His Ser Ser Ala Ile Ser Val Val Lys Ile Leu Arg Val Leu
945 950 955 960

Arg Val Leu Arg Pro Leu Arg Ala Ile Asn Arg Ala Lys Gly Leu Lys
965 970 975

pha4262.ST25.txt

His Val Val Gln Cys Val Phe Val Ala Ile Arg Thr Ile Gly Asn Ile
980 985 990

Met Ile Val Thr Thr Leu Leu Gln Phe Met Phe Ala Cys Ile Gly Val
995 1000 1005

Gln Leu Phe Lys Gly Lys Phe Tyr Thr Cys Thr Asp Glu Ala Lys
1010 1015 1020

His Thr Pro Gln Glu Cys Lys Gly Ser Phe Leu Val Tyr Pro Asp
1025 1030 1035

Gly Asp Val Ser Arg Pro Leu Val Arg Glu Arg Leu Trp Val Asn
1040 1045 1050

Ser Asp Phe Asn Phe Asp Asn Val Leu Ser Ala Met Met Ala Leu
1055 1060 1065

Phe Thr Val Ser Thr Phe Glu Gly Trp Pro Ala Leu Leu Tyr Lys
1070 1075 1080

Ala Ile Asp Ala Tyr Ala Glu Asp His Gly Pro Ile Tyr Asn Tyr
1085 1090 1095

Arg Val Glu Ile Ser Val Phe Phe Ile Val Tyr Ile Ile Ile Ile
1100 1105 1110

Ala Phe Phe Met Met Asn Ile Phe Val Gly Phe Val Ile Ile Thr
1115 1120 1125

Phe Arg Ala Gln Gly Glu Gln Glu Tyr Gln Asn Cys Glu Leu Asp
1130 1135 1140

Lys Asn Gln Arg Gln Cys Val Glu Tyr Ala Leu Lys Ala Gln Pro
1145 1150 1155

Leu Arg Arg Tyr Ile Pro Lys Asn Pro His Gln Tyr Arg Val Trp
1160 1165 1170

Ala Thr Val Asn Ser Ala Ala Phe Glu Tyr Leu Met Phe Leu Leu
1175 1180 1185

Ile Leu Leu Asn Thr Val Ala Leu Ala Met Gln His Tyr Glu Gln
1190 1195 1200

Thr Ala Pro Phe Asn Tyr Ala Met Asp Ile Leu Asn Met Val Phe
Page 48

1205		1210		1215	
Thr Gly	Leu Phe Thr Ile	Glu Met Val Leu Lys	Ile Ile Ala Phe		
1220		1225	1230		
Lys Pro	Lys His Tyr Phe	Thr Asp Ala Trp Asn	Thr Phe Asp Ala		
1235		1240	1245		
Leu Ile	Val Val Gly Ser	Ile Val Asp Ile Ala	Val Thr Glu Val		
1250		1255	1260		
Asn Asn	Gly Gly His Leu	Gly Glu Ser Ser Glu	Asp Ser Ser Arg		
1265		1270	1275		
Ile Ser	Ile Thr Phe Phe	Arg Leu Phe Arg Val	Met Arg Leu Val		
1280		1285	1290		
Lys Leu	Leu Ser Lys Gly	Glu Gly Ile Arg Thr	Leu Leu Trp Thr		
1295		1300	1305		
Phe Ile	Lys Ser Phe Gln	Ala Leu Pro Tyr Val	Ala Leu Leu Ile		
1310		1315	1320		
Ala Met	Ile Phe Phe Ile	Tyr Ala Val Ile Gly	Met Gln Met Phe		
1325		1330	1335		
Gly Lys	Val Ala Leu Gln	Asp Gly Thr Gln Ile	Asn Arg Asn Asn		
1340		1345	1350		
Asn Phe	Gln Thr Phe Pro	Gln Ala Val Leu Leu	Leu Phe Arg Cys		
1355		1360	1365		
Ala Thr	Gly Glu Ala Trp	Gln Glu Ile Met Leu	Ala Ser Leu Pro		
1370		1375	1380		
Gly Asn	Arg Cys Asp Pro	Glu Ser Asp Phe Gly	Pro Gly Glu Glu		
1385		1390	1395		
Phe Thr	Cys Gly Ser Asn	Phe Ala Ile Ala Tyr	Phe Ile Ser Phe		
1400		1405	1410		
Phe Met	Leu Cys Ala Phe	Leu Ile Ile Asn Leu	Phe Val Ala Val		
1415		1420	1425		
Ile Met	Asp Asn Phe Asp	Tyr Leu Thr Arg Asp	Trp Ser Ile Leu		
1430		1435	1440		

Gly Pro His His Leu Asp Glu Phe Lys Arg Ile Trp Ser Glu Tyr
 1445 1450 1455
 Asp Pro Gly Ala Lys Gly Arg Ile Lys His Leu Asp Val Val Ala
 1460 1465 1470
 Leu Leu Arg Arg Ile Gln Pro Pro Leu Gly Phe Gly Lys Leu Cys
 1475 1480 1485
 Pro His Arg Val Ala Cys Lys Arg Leu Val Ala Met Asn Met Pro
 1490 1495 1500
 Leu Asn Ser Asp Gly Thr Val Thr Phe Asn Ala Thr Leu Phe Ala
 1505 1510 1515
 Leu Val Arg Thr Ser Leu Lys Ile Lys Thr Glu Gly Asn Leu Glu
 1520 1525 1530
 Gln Ala Asn Gln Glu Leu Arg Ile Val Ile Lys Lys Ile Trp Lys
 1535 1540 1545
 Arg Met Lys Gln Lys Leu Leu Asp Glu Val Ile Pro Pro Pro Asp
 1550 1555 1560
 Glu Glu Glu Val Thr Val Gly Lys Phe Tyr Ala Thr Phe Leu Ile
 1565 1570 1575
 Gln Asp Tyr Phe Arg Lys Phe Arg Arg Arg Lys Glu Lys Gly Leu
 1580 1585 1590
 Leu Gly Asn Asp Ala Ala Pro Ser Thr Ser Ser Ala Leu Gln Ala
 1595 1600 1605
 Gly Leu Arg Ser Leu Gln Asp Leu Gly Pro Glu Met Arg Gln Ala
 1610 1615 1620
 Leu Thr Cys Asp Thr Glu Glu Glu Glu Glu Glu Gln Glu Gly
 1625 1630 1635
 Val Glu Glu Glu Asp Glu Lys Asp Leu Glu Thr Asn Lys Ala Thr
 1640 1645 1650
 Met Val Ser Gln Pro Ser Ala Arg Arg Gly Ser Gly Ile Ser Val
 1655 1660 1665
 Ser Leu Pro Val Gly Asp Arg Leu Pro Asp Ser Leu Ser Phe Gly
 1670 1675 1680

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Pro	Ser	Asp	Asp	Asp	Arg	Gly	Thr	Pro	Thr	Ser	Ser	Gln	Pro	Ser
	1685					1690					1695			
Val	Pro	Gln	Ala	Gly	Ser	Asn	Thr	His	Arg	Arg	Gly	Ser	Gly	Ala
	1700					1705					1710			
Leu	Ile	Phe	Thr	Ile	Pro	Glu	Glu	Gly	Asn	Ser	Gln	Pro	Lys	Gly
	1715					1720					1725			
Thr	Lys	Gly	Gln	Asn	Lys	Gln	Asp	Glu	Asp	Glu	Glu	Val	Pro	Asp
	1730					1735					1740			
Arg	Leu	Ser	Tyr	Leu	Asp	Glu	Gln	Ala	Gly	Thr	Pro	Pro	Cys	Ser
	1745					1750					1755			
Val	Leu	Leu	Pro	Pro	His	Arg	Ala	Gln	Arg	Tyr	Met	Asp	Gly	His
	1760					1765					1770			
Leu	Val	Pro	Arg	Arg	Arg	Leu	Leu	Pro	Pro	Thr	Pro	Ala	Gly	Arg
	1775					1780					1785			
Lys	Pro	Ser	Phe	Thr	Ile	Gln	Cys	Leu	Gln	Arg	Gln	Gly	Ser	Cys
	1790					1795					1800			
Glu	Asp	Leu	Pro	Ile	Pro	Gly	Thr	Tyr	His	Arg	Gly	Arg	Asn	Ser
	1805					1810					1815			
Gly	Pro	Asn	Arg	Ala	Gln	Gly	Ser	Trp	Ala	Thr	Pro	Pro	Gln	Arg
	1820					1825					1830			
Gly	Arg	Leu	Leu	Tyr	Ala	Pro	Leu	Leu	Leu	Val	Glu	Glu	Gly	Ala
	1835					1840					1845			
Ala	Gly	Glu	Gly	Tyr	Leu	Gly	Arg	Ser	Ser	Gly	Pro	Leu	Arg	Thr
	1850					1855					1860			
Phe	Thr	Cys	Leu	His	Val	Pro	Gly	Thr	His	Ser	Asp	Pro	Ser	His
	1865					1870					1875			
Gly	Lys	Arg	Gly	Ser	Ala	Asp	Ser	Leu	Val	Glu	Ala	Val	Leu	Ile
	1880					1885					1890			
Ser	Glu	Gly	Leu	Gly	Leu	Phe	Ala	Arg	Asp	Pro	Arg	Phe	Val	Ala
	1895					1900					1905			
Leu	Ala	Lys	Gln	Glu	Ile	Ala	Asp	Ala	Cys	Arg	Leu	Thr	Leu	Asp
	1910					1915					1920			

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Glu Met Asp Asn Ala Ala Ser Asp Leu Leu Ala Gln Gly Thr Ser
1925 1930 1935

Ser Leu Tyr Ser Asp Glu Glu Ser Ile Leu Ser Arg Phe Asp Glu
1940 1945 1950

Glu Asp Leu Gly Asp Glu Met Ala Cys Val His Ala Leu
1955 1960 1965

<210> 7

<211> 1977

<212> PRT

<213> Homo sapiens

<400> 7

Met Ser Glu Ser Glu Gly Gly Lys Asp Thr Thr Pro Glu Pro Ser Pro
1 5 10 15

Ala Asn Gly Ala Gly Pro Gly Pro Glu Trp Gly Leu Cys Pro Gly Pro
20 25 30

Pro Ala Val Glu Gly Glu Ser Ser Gly Ala Ser Gly Leu Gly Thr Pro
35 40 45

Lys Arg Arg Asn Gln His Ser Lys His Lys Thr Val Ala Val Ala Ser
50 55 60

Ala Gln Arg Ser Pro Arg Ala Leu Phe Cys Leu Thr Leu Ala Asn Pro
65 70 75 80

Leu Arg Arg Ser Cys Ile Ser Ile Val Glu Trp Lys Pro Phe Asp Ile
85 90 95

Leu Ile Leu Leu Thr Ile Phe Ala Asn Cys Val Ala Leu Gly Val Tyr
100 105 110

Ile Pro Phe Pro Glu Asp Asp Ser Asn Thr Ala Asn His Asn Leu Glu
115 120 125

Gln Val Glu Tyr Val Phe Leu Val Ile Phe Thr Val Glu Thr Val Leu
130 135 140

Lys Ile Val Ala Tyr Gly Leu Val Leu His Pro Ser Ala Tyr Ile Arg
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145		150		155		160									
Asn	Gly	Trp	Asn	Leu 165	Leu	Asp	Phe	Ile	Ile 170	Val	Val	Val	Gly	Leu 175	Phe
Ser	Val	Leu	Leu 180	Glu	Gln	Gly	Pro	Gly 185	Arg	Pro	Gly	Asp	Ala 190	Pro	His
Thr	Gly	Gly 195	Lys	Pro	Gly	Gly	Phe 200	Asp	Val	Lys	Ala	Leu 205	Arg	Ala	Phe
Arg	Val 210	Leu	Arg	Pro	Leu	Arg 215	Leu	Val	Ser	Gly	Val 220	Pro	Ser	Leu	His
Ile 225	Val	Leu	Asn	Ser	Ile 230	Met	Lys	Ala	Leu	Val 235	Pro	Leu	Leu	His	Ile 240
Ala	Leu	Leu	Val	Leu 245	Phe	Val	Ile	Ile	Ile 250	Tyr	Ala	Ile	Ile	Gly 255	Leu
Glu	Leu	Phe	Leu 260	Gly	Arg	Met	His	Lys 265	Thr	Cys	Tyr	Phe	Leu 270	Gly	Ser
Asp	Met	Glu 275	Ala	Glu	Glu	Asp	Pro 280	Ser	Pro	Cys	Ala	Ser 285	Ser	Gly	Ser
Gly	Arg 290	Ala	Cys	Thr	Leu	Asn 295	Gln	Thr	Glu	Cys	Arg 300	Gly	Arg	Trp	Pro
Gly 305	Pro	Asn	Gly	Gly	Ile 310	Thr	Asn	Phe	Asp	Asn 315	Phe	Phe	Phe	Ala	Met 320
Leu	Thr	Val	Phe	Gln 325	Cys	Val	Thr	Met	Glu 330	Gly	Trp	Thr	Asp	Val 335	Leu
Tyr	Trp	Met	Gln 340	Asp	Ala	Met	Gly	Tyr 345	Glu	Leu	Pro	Trp	Val 350	Tyr	Phe
Val	Ser	Leu 355	Val	Ile	Phe	Gly	Ser 360	Phe	Phe	Val	Leu	Asn 365	Leu	Val	Leu
Gly	Val 370	Leu	Ser	Gly	Glu	Phe 375	Ser	Lys	Glu	Arg	Glu 380	Lys	Ala	Lys	Ala
Arg 385	Gly	Asp	Phe	Gln	Lys 390	Gln	Arg	Glu	Lys	Gln 395	Gln	Met	Glu	Glu	Asp 400

Leu Arg Gly Tyr Leu Asp Trp Ile Thr Gln Ala Glu Glu Leu Asp Met
 405 410 415

Glu Asp Pro Ser Ala Asp Asp Asn Leu Gly Ser Met Ala Glu Glu Gly
 420 425 430

Arg Ala Gly His Arg Pro Gln Leu Ala Glu Leu Thr Asn Arg Arg Arg
 435 440 445

Gly Arg Leu Arg Trp Phe Ser His Ser Thr Arg Ser Thr His Ser Thr
 450 455 460

Ser Ser His Ala Ser Leu Pro Ala Ser Asp Thr Gly Ser Met Thr Glu
 465 470 475 480

Thr Gln Gly Asp Glu Asp Glu Glu Glu Gly Ala Leu Ala Ser Cys Thr
 485 490 495

Arg Cys Leu Asn Lys Ile Met Lys Thr Arg Val Cys Arg Arg Leu Arg
 500 505 510

Arg Ala Asn Arg Val Leu Arg Ala Arg Cys Arg Arg Ala Val Lys Ser
 515 520 525

Asn Ala Cys Tyr Trp Ala Val Leu Leu Leu Val Phe Leu Asn Thr Leu
 530 535 540

Thr Ile Ala Ser Glu His His Gly Gln Pro Val Trp Leu Thr Gln Ile
 545 550 555 560

Gln Glu Tyr Ala Asn Lys Val Leu Leu Cys Leu Phe Thr Val Glu Met
 565 570 575

Leu Leu Lys Leu Tyr Gly Leu Gly Pro Ser Ala Tyr Val Ser Ser Phe
 580 585 590

Phe Asn Arg Phe Asp Cys Phe Val Val Cys Gly Gly Ile Leu Glu Thr
 595 600 605

Thr Leu Val Glu Val Gly Ala Met Gln Pro Leu Gly Ile Ser Val Leu
 610 615 620

Arg Cys Val Arg Leu Leu Arg Ile Phe Lys Val Thr Arg His Trp Ala
 625 630 635 640

Ser Leu Ser Asn Leu Val Ala Ser Leu Leu Asn Ser Met Lys Ser Ile
 645 650 655

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Ala Ser Leu Leu Leu Leu Leu Phe Leu Phe Ile Ile Ile Phe Ser Leu
660 665 670

Leu Gly Met Gln Leu Phe Gly Gly Lys Phe Asn Phe Asp Gln Thr His
675 680 685

Thr Lys Arg Ser Thr Phe Asp Thr Phe Pro Gln Ala Leu Leu Thr Val
690 695 700

Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Val Val Met Tyr Asp Gly
705 710 715 720

Ile Met Ala Tyr Gly Gly Pro Phe Phe Pro Gly Met Leu Val Cys Ile
725 730 735

Tyr Phe Ile Ile Leu Phe Ile Cys Gly Asn Tyr Ile Leu Leu Asn Val
740 745 750

Phe Leu Ala Ile Ala Val Asp Asn Leu Ala Ser Gly Asp Ala Gly Thr
755 760 765

Ala Lys Asp Lys Gly Gly Glu Lys Ser Asn Glu Lys Asp Leu Pro Gln
770 775 780

Glu Asn Glu Gly Leu Val Pro Gly Val Glu Lys Glu Glu Glu Glu Gly
785 790 795 800

Ala Arg Arg Glu Gly Ala Asp Met Glu Glu Glu Glu Glu Glu Glu
805 810 815

Glu Glu Glu Glu Glu Glu Glu Glu Gly Ala Gly Gly Val Glu Leu
820 825 830

Leu Gln Glu Val Val Pro Lys Glu Lys Val Val Pro Ile Pro Glu Gly
835 840 845

Ser Ala Phe Phe Cys Leu Ser Gln Thr Asn Pro Leu Arg Lys Gly Cys
850 855 860

His Thr Leu Ile His His His Val Phe Thr Asn Leu Ile Leu Val Phe
865 870 875 880

Ile Ile Leu Ser Ser Val Ser Leu Ala Ala Glu Asp Pro Ile Arg Ala
885 890 895

His Ser Phe Arg Asn His Ile Leu Gly Tyr Phe Asp Tyr Ala Phe Thr
900 905 910

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Ser Ile Phe Thr Val Glu Ile Leu Leu Lys Met Thr Val Phe Gly Ala
915 920 925

Phe Leu His Arg Gly Ser Phe Cys Arg Ser Trp Phe Asn Met Leu Asp
930 935 940

Leu Leu Val Val Ser Val Ser Leu Ile Ser Phe Gly Ile His Ser Ser
945 950 955 960

Ala Ile Ser Val Val Lys Ile Leu Arg Val Leu Arg Val Leu Arg Pro
965 970 975

Leu Arg Ala Ile Asn Arg Ala Lys Gly Leu Lys His Val Val Gln Cys
980 985 990

Val Phe Val Ala Ile Arg Thr Ile Gly Asn Ile Met Ile Val Thr Thr
995 1000 1005

Leu Leu Gln Phe Met Phe Ala Cys Ile Gly Val Gln Leu Phe Lys
1010 1015 1020

Gly Lys Phe Tyr Thr Cys Thr Asp Glu Ala Lys His Thr Pro Gln
1025 1030 1035

Glu Cys Lys Gly Ser Phe Leu Val Tyr Pro Asp Gly Asp Val Ser
1040 1045 1050

Arg Pro Leu Val Arg Glu Arg Leu Trp Val Asn Ser Asp Phe Asn
1055 1060 1065

Phe Asp Asn Val Leu Ser Ala Met Met Ala Leu Phe Thr Val Ser
1070 1075 1080

Thr Phe Glu Gly Trp Pro Ala Leu Leu Tyr Lys Ala Ile Asp Ala
1085 1090 1095

Tyr Ala Glu Asp His Gly Pro Ile Tyr Asn Tyr Arg Val Glu Ile
1100 1105 1110

Ser Val Phe Phe Ile Val Tyr Ile Ile Ile Ile Ala Phe Phe Met
1115 1120 1125

Met Asn Ile Phe Val Gly Phe Val Ile Ile Thr Phe Arg Ala Gln
1130 1135 1140

Gly Glu Gln Glu Tyr Gln Asn Cys Glu Leu Asp Lys Asn Gln Arg

1155

Gln	Cys	Val	Glu	Tyr	Ala	Leu	Lys	Ala	Gln	Pro	Leu	Arg	Arg	Tyr
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Ile	Pro	Lys	Asn	Pro	His	Gln	Tyr	Arg	Val	Trp	Ala	Thr	Val	Asn
	1175					1180					1185			
Ser	Ala	Ala	Phe	Glu	Tyr	Leu	Met	Phe	Leu	Leu	Ile	Leu	Leu	Asn
	1190					1195					1200			
Thr	Val	Ala	Leu	Ala	Met	Gln	His	Tyr	Glu	Gln	Thr	Ala	Pro	Phe
	1205					1210					1215			
Asn	Tyr	Ala	Met	Asp	Ile	Leu	Asn	Met	Val	Phe	Thr	Gly	Leu	Phe
	1220					1225					1230			
Thr	Ile	Glu	Met	Val	Leu	Lys	Ile	Ile	Ala	Phe	Lys	Pro	Lys	His
	1235					1240					1245			
Tyr	Phe	Thr	Asp	Ala	Trp	Asn	Thr	Phe	Asp	Ala	Leu	Ile	Val	Val
	1250					1255					1260			
Gly	Ser	Ile	Val	Asp	Ile	Ala	Val	Thr	Glu	Val	Asn	Asn	Gly	Gly
	1265					1270					1275			
His	Leu	Gly	Glu	Ser	Ser	Glu	Asp	Ser	Ser	Arg	Ile	Ser	Ile	Thr
	1280					1285					1290			
Phe	Phe	Arg	Leu	Phe	Arg	Val	Met	Arg	Leu	Val	Lys	Leu	Leu	Ser
	1295					1300					1305			
Lys	Gly	Glu	Gly	Ile	Arg	Thr	Leu	Leu	Trp	Thr	Phe	Ile	Lys	Ser
	1310					1315					1320			
Phe	Gln	Ala	Leu	Pro	Tyr	Val	Ala	Leu	Leu	Ile	Ala	Met	Ile	Phe
	1325					1330					1335			
Phe	Ile	Tyr	Ala	Val	Ile	Gly	Met	Gln	Met	Phe	Gly	Lys	Val	Ala
	1340					1345					1350			
Leu	Gln	Asp	Gly	Thr	Gln	Ile	Asn	Arg	Asn	Asn	Asn	Phe	Gln	Thr
	1355					1360					1365			
Phe	Pro	Gln	Ala	Val	Leu	Leu	Leu	Phe	Arg	Cys	Ala	Thr	Gly	Glu
	1370					1375					1380			

Ala Trp Gln Glu Ile Met Leu Ala Ser Leu Pro Gly Asn Arg Cys
1385 1390 1395

Asp Pro Glu Ser Asp Phe Gly Pro Gly Glu Glu Phe Thr Cys Gly
1400 1405 1410

Ser Asn Phe Ala Ile Ala Tyr Phe Ile Ser Phe Phe Met Leu Cys
1415 1420 1425

Ala Phe Leu Ile Ile Asn Leu Phe Val Ala Val Ile Met Asp Asn
1430 1435 1440

Phe Asp Tyr Leu Thr Arg Asp Trp Ser Ile Leu Gly Pro His His
1445 1450 1455

Leu Asp Glu Phe Lys Arg Ile Trp Ser Glu Tyr Asp Pro Gly Ala
1460 1465 1470

Lys Gly Arg Ile Lys His Leu Asp Val Val Ala Leu Leu Arg Arg
1475 1480 1485

Ile Gln Pro Pro Leu Gly Phe Gly Lys Leu Cys Pro His Arg Val
1490 1495 1500

Ala Cys Lys Arg Leu Val Ala Met Asn Met Pro Leu Asn Ser Asp
1505 1510 1515

Gly Thr Val Thr Phe Asn Ala Thr Leu Phe Ala Leu Val Arg Thr
1520 1525 1530

Ser Leu Lys Ile Lys Thr Glu Gly Asn Leu Glu Gln Ala Asn Gln
1535 1540 1545

Glu Leu Arg Ile Val Ile Lys Lys Ile Trp Lys Arg Met Lys Gln
1550 1555 1560

Lys Leu Leu Asp Glu Val Ile Pro Pro Pro Asp Glu Glu Glu Val
1565 1570 1575

Thr Val Gly Lys Phe Tyr Ala Thr Phe Leu Ile Gln Asp Tyr Phe
1580 1585 1590

Arg Lys Phe Arg Arg Arg Lys Glu Lys Gly Leu Leu Gly Asn Asp
1595 1600 1605

Ala Ala Pro Ser Thr Ser Ser Ala Leu Gln Ala Gly Leu Arg Ser
1610 1615 1620

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Leu Gln Asp Leu Gly Pro Glu Met Arg Gln Ala Leu Thr Cys Asp
 1625 1630 1635
 Thr Glu Glu Glu Glu Glu Gly Gln Glu Gly Val Glu Glu Glu
 1640 1645 1650
 Asp Glu Lys Asp Leu Glu Thr Asn Lys Ala Thr Met Val Ser Gln
 1655 1660 1665
 Pro Ser Ala Arg Arg Gly Ser Gly Ile Ser Val Ser Leu Pro Val
 1670 1675 1680
 Gly Asp Arg Leu Pro Asp Ser Leu Ser Phe Gly Pro Ser Asp Asp
 1685 1690 1695
 Asp Arg Gly Thr Pro Thr Ser Ser Gln Pro Ser Val Pro Gln Ala
 1700 1705 1710
 Gly Ser Asn Thr His Arg Arg Gly Ser Gly Ala Leu Ile Phe Thr
 1715 1720 1725
 Ile Pro Glu Glu Gly Asn Ser Gln Pro Lys Gly Thr Lys Gly Gln
 1730 1735 1740
 Asn Lys Gln Asp Glu Asp Glu Glu Val Pro Asp Arg Leu Ser Tyr
 1745 1750 1755
 Leu Asp Glu Gln Ala Gly Thr Pro Pro Cys Ser Val Leu Leu Pro
 1760 1765 1770
 Pro His Arg Ala Gln Arg Tyr Met Asp Gly His Leu Val Pro Arg
 1775 1780 1785
 Arg Arg Leu Leu Pro Pro Thr Pro Ala Gly Arg Lys Pro Ser Phe
 1790 1795 1800
 Thr Ile Gln Cys Leu Gln Arg Gln Gly Ser Cys Glu Asp Leu Pro
 1805 1810 1815
 Ile Pro Gly Thr Tyr His Arg Gly Arg Asn Ser Gly Pro Asn Arg
 1820 1825 1830
 Ala Gln Gly Ser Trp Ala Thr Pro Pro Gln Arg Gly Arg Leu Leu
 1835 1840 1845
 Tyr Ala Pro Leu Leu Leu Val Glu Glu Gly Ala Ala Gly Glu Gly
 1850 1855 1860

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Tyr Leu Gly Arg Ser Ser Gly Pro Leu Arg Thr Phe Thr Cys Leu
1865 1870 1875

His Val Pro Gly Thr His Ser Asp Pro Ser His Gly Lys Arg Gly
1880 1885 1890

Ser Ala Asp Ser Leu Val Glu Ala Val Leu Ile Ser Glu Gly Leu
1895 1900 1905

Gly Leu Phe Ala Arg Asp Pro Arg Phe Val Ala Leu Ala Lys Gln
1910 1915 1920

Glu Ile Ala Asp Ala Cys Arg Leu Thr Leu Asp Glu Met Asp Asn
1925 1930 1935

Ala Ala Ser Asp Leu Leu Ala Gln Gly Thr Ser Ser Leu Tyr Ser
1940 1945 1950

Asp Glu Glu Ser Ile Leu Ser Arg Phe Asp Glu Glu Asp Leu Gly
1955 1960 1965

Asp Glu Met Ala Cys Val His Ala Leu
1970 1975

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<211> 2339

<212> PRT

<213> Homo sapiens

<400> 8

Met Val Arg Phe Gly Asp Glu Leu Gly Gly Arg Tyr Gly Gly Pro Gly
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Gly Gly Glu Arg Ala Arg Gly Gly Gly Ala Gly Gly Ala Gly Gly Pro
20 25 30

Gly Pro Gly Gly Leu Gln Pro Gly Gln Arg Val Leu Tyr Lys Gln Ser
35 40 45

Ile Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro Ile Pro Val
50 55 60

Lys Gln Asn Cys Phe Thr Val Asn Arg Ser Leu Phe Val Phe Ser Glu
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65		70		75		80									
Asp	Asn	Val	Val	Arg	Lys	Tyr	Ala	Lys	Arg	Ile	Thr	Glu	Trp	Pro	Pro
				85					90					95	
Phe	Glu	Tyr	Met	Ile	Leu	Ala	Thr	Ile	Ile	Ala	Asn	Cys	Ile	Val	Leu
			100					105					110		
Ala	Leu	Glu	Gln	His	Leu	Pro	Asp	Gly	Asp	Lys	Thr	Pro	Met	Ser	Glu
		115					120					125			
Arg	Leu	Asp	Asp	Thr	Glu	Pro	Tyr	Phe	Ile	Gly	Ile	Phe	Cys	Phe	Glu
	130					135					140				
Ala	Gly	Ile	Lys	Ile	Ile	Ala	Leu	Gly	Phe	Val	Phe	His	Lys	Gly	Ser
145					150					155					160
Tyr	Leu	Arg	Asn	Gly	Trp	Asn	Val	Met	Asp	Phe	Val	Val	Val	Leu	Thr
				165					170					175	
Gly	Ile	Leu	Ala	Thr	Ala	Gly	Thr	Asp	Phe	Asp	Leu	Arg	Thr	Leu	Arg
			180					185					190		
Ala	Val	Arg	Val	Leu	Arg	Pro	Leu	Lys	Leu	Val	Ser	Gly	Ile	Pro	Ser
		195					200					205			
Leu	Gln	Val	Val	Leu	Lys	Ser	Ile	Met	Lys	Ala	Met	Val	Pro	Leu	Leu
	210					215					220				
Gln	Ile	Gly	Leu	Leu	Leu	Phe	Phe	Ala	Ile	Leu	Met	Phe	Ala	Ile	Ile
225					230					235				240	
Gly	Leu	Glu	Phe	Tyr	Met	Gly	Lys	Phe	His	Lys	Ala	Cys	Phe	Pro	Asn
				245					250					255	
Ser	Thr	Asp	Ala	Glu	Pro	Val	Gly	Asp	Phe	Pro	Cys	Gly	Lys	Glu	Ala
			260					265					270		
Pro	Ala	Arg	Leu	Cys	Glu	Gly	Asp	Thr	Glu	Cys	Arg	Glu	Tyr	Trp	Pro
		275					280					285			
Gly	Pro	Asn	Phe	Gly	Ile	Thr	Asn	Phe	Asp	Asn	Ile	Leu	Phe	Ala	Ile
	290					295					300				
Leu	Thr	Val	Phe	Gln	Cys	Ile	Thr	Met	Glu	Gly	Trp	Thr	Asp	Ile	Leu
305					310					315					320

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Tyr Asn Thr Asn Asp Ala Ala Gly Asn Thr Trp Asn Trp Leu Tyr Phe
325 330 335

Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu Asn Leu Val Leu
340 345 350

Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn
355 360 365

Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu
370 375 380

Leu Asn Gly Tyr Leu Glu Trp Ile Phe Lys Ala Glu Glu Val Met Leu
385 390 400

Ala Glu Glu Asp Arg Asn Ala Glu Glu Lys Ser Pro Leu Asp Val Leu
405 410 415

Lys Arg Ala Ala Thr Lys Lys Ser Arg Asn Asp Leu Ile His Ala Glu
420 425 430

Glu Gly Glu Asp Arg Phe Ala Asp Leu Cys Ala Val Gly Ser Pro Phe
435 440 445

Ala Arg Ala Ser Leu Lys Ser Gly Lys Thr Glu Ser Ser Ser Tyr Phe
450 455 460

Arg Arg Lys Glu Lys Met Phe Arg Phe Phe Ile Arg Arg Met Val Lys
465 470 475 480

Ala Gln Ser Phe Tyr Trp Val Val Leu Cys Val Val Ala Leu Asn Thr
485 490 495

Leu Cys Val Ala Met Val His Tyr Asn Gln Pro Arg Arg Leu Thr Thr
500 505 510

Thr Leu Tyr Phe Ala Glu Phe Val Phe Leu Gly Leu Phe Leu Thr Glu
515 520 525

Met Ser Leu Lys Met Tyr Gly Leu Gly Pro Arg Ser Tyr Phe Arg Ser
530 535 540

Ser Phe Asn Cys Phe Asp Phe Gly Val Ile Val Gly Ser Val Phe Glu
545 550 555 560

Val Val Trp Ala Ala Ile Lys Pro Gly Ser Ser Phe Gly Ile Ser Val
565 570 575

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Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Val Thr Lys Tyr Trp
 580 585 590
 Ser Ser Leu Arg Asn Leu Val Val Ser Leu Leu Asn Ser Met Lys Ser
 595 600 605
 Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe Ala
 610 615 620
 Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe Asn Phe Gln Asp Glu
 625 630 635 640
 Thr Pro Thr Thr Asn Phe Asp Thr Phe Pro Ala Ala Ile Leu Thr Val
 645 650 655
 Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Ala Val Met Tyr His Gly
 660 665 670
 Ile Glu Ser Gln Gly Gly Val Ser Lys Gly Met Phe Ser Ser Phe Tyr
 675 680 685
 Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val Phe
 690 695 700
 Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr Lys
 705 710 715 720
 Asp Glu Glu Glu Met Glu Glu Ala Ala Asn Gln Lys Leu Ala Leu Gln
 725 730 735
 Lys Ala Lys Glu Val Ala Glu Val Ser Pro Met Ser Ala Ala Asn Ile
 740 745 750
 Ser Ile Ala Ala Arg Gln Gln Asn Ser Ala Lys Ala Arg Ser Val Trp
 755 760 765
 Glu Gln Arg Ala Ser Gln Leu Arg Leu Gln Asn Leu Arg Ala Ser Cys
 770 775 780
 Glu Ala Leu Tyr Ser Glu Met Asp Pro Glu Glu Arg Leu Arg Phe Ala
 785 790 795 800
 Thr Thr Arg His Leu Arg Pro Asp Met Lys Thr His Leu Asp Arg Pro
 805 810 815
 Leu Val Val Glu Leu Gly Arg Asp Gly Ala Arg Gly Pro Val Gly Gly
 820 825 830

Lys Ala Arg Pro Glu Ala Ala Glu Ala Pro Glu Gly Val Asp Pro Pro
 835 840 845
 Arg Arg His His Arg His Arg Asp Lys Asp Lys Thr Pro Ala Ala Gly
 850 855 860
 Asp Gln Asp Arg Ala Glu Ala Pro Lys Ala Glu Ser Gly Glu Pro Gly
 865 870 875 880
 Ala Arg Glu Glu Arg Pro Arg Pro His Arg Ser His Ser Lys Glu Ala
 885 890 895
 Ala Gly Pro Pro Glu Ala Arg Ser Glu Arg Gly Arg Gly Pro Gly Pro
 900 905 910
 Glu Gly Gly Arg Arg His His Arg Arg Gly Ser Pro Glu Glu Ala Ala
 915 920 925
 Glu Arg Glu Pro Arg Arg His Arg Ala His Arg His Gln Asp Pro Ser
 930 935 940
 Lys Glu Cys Ala Gly Ala Lys Gly Glu Arg Arg Ala Arg His Arg Gly
 945 950 955 960
 Gly Pro Arg Ala Gly Pro Arg Glu Ala Glu Ser Gly Glu Glu Pro Ala
 965 970 975
 Arg Arg His Arg Ala Arg His Lys Ala Gln Pro Ala His Glu Ala Val
 980 985 990
 Glu Lys Glu Thr Thr Glu Lys Glu Ala Thr Glu Lys Glu Ala Glu Ile
 995 1000 1005
 Val Glu Ala Asp Lys Glu Lys Glu Leu Arg Asn His Gln Pro Arg
 1010 1015 1020
 Glu Pro His Cys Asp Leu Glu Thr Ser Gly Thr Val Thr Val Gly
 1025 1030 1035
 Pro Met His Thr Leu Pro Ser Thr Cys Leu Gln Lys Val Glu Glu
 1040 1045 1050
 Gln Pro Glu Asp Ala Asp Asn Gln Arg Asn Val Thr Arg Met Gly
 1055 1060 1065
 Ser Gln Pro Pro Asp Pro Asn Thr Ile Val His Ile Pro Val Met
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1070						1075						
Leu	Thr	Gly	Pro	Leu	Gly	Glu	Ala	Thr	Val	Val	Pro	Ser Gly Asn
1085						1090					1095	
Val	Asp	Leu	Glu	Ser	Gln	Ala	Glu	Gly	Lys	Lys	Glu	Val Glu Ala
1100						1105					1110	
Asp	Asp	Val	Met	Arg	Ser	Gly	Pro	Arg	Pro	Ile	Val	Pro Tyr Ser
1115						1120					1125	
Ser	Met	Phe	Cys	Leu	Ser	Pro	Thr	Asn	Leu	Leu	Arg	Arg Phe Cys
1130						1135					1140	
His	Tyr	Ile	Val	Thr	Met	Arg	Tyr	Phe	Glu	Val	Val	Ile Leu Val
1145						1150					1155	
Val	Ile	Ala	Leu	Ser	Ser	Ile	Ala	Leu	Ala	Ala	Glu	Asp Pro Val
1160						1165					1170	
Arg	Thr	Asp	Ser	Pro	Arg	Asn	Asn	Ala	Leu	Lys	Tyr	Leu Asp Tyr
1175						1180					1185	
Ile	Phe	Thr	Gly	Val	Phe	Thr	Phe	Glu	Met	Val	Ile	Lys Met Ile
1190						1195					1200	
Asp	Leu	Gly	Leu	Leu	Leu	His	Pro	Gly	Ala	Tyr	Phe	Arg Asp Leu
1205						1210					1215	
Trp	Asn	Ile	Leu	Asp	Phe	Ile	Val	Val	Ser	Gly	Ala	Leu Val Ala
1220						1225					1230	
Phe	Ala	Phe	Ser	Gly	Ser	Lys	Gly	Lys	Asp	Ile	Asn	Thr Ile Lys
1235						1240					1245	
Ser	Leu	Arg	Val	Leu	Arg	Val	Leu	Arg	Pro	Leu	Lys	Thr Ile Lys
1250						1255					1260	
Arg	Leu	Pro	Lys	Leu	Lys	Ala	Val	Phe	Asp	Cys	Val	Val Asn Ser
1265						1270					1275	
Leu	Lys	Asn	Val	Leu	Asn	Ile	Leu	Ile	Val	Tyr	Met	Leu Phe Met
1280						1285					1290	
Phe	Ile	Phe	Ala	Val	Ile	Ala	Val	Gln	Leu	Phe	Lys	Gly Lys Phe
1295						1300					1305	

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Phe	Tyr	Cys	Thr	Asp	Glu	Ser	Lys	Glu	Leu	Glu	Arg	Asp	Cys	Arg
1310						1315					1320			
Gly	Gln	Tyr	Leu	Asp	Tyr	Glu	Lys	Glu	Glu	Val	Glu	Ala	Gln	Pro
1325						1330					1335			
Arg	Gln	Trp	Lys	Lys	Tyr	Asp	Phe	His	Tyr	Asp	Asn	Val	Leu	Trp
1340						1345					1350			
Ala	Leu	Leu	Thr	Leu	Phe	Thr	Val	Ser	Thr	Gly	Glu	Gly	Trp	Pro
1355						1360					1365			
Met	Val	Leu	Lys	His	Ser	Val	Asp	Ala	Thr	Tyr	Glu	Glu	Gln	Gly
1370						1375					1380			
Pro	Ser	Pro	Gly	Tyr	Arg	Met	Glu	Leu	Ser	Ile	Phe	Tyr	Val	Val
1385						1390					1395			
Tyr	Phe	Val	Val	Phe	Pro	Phe	Phe	Phe	Val	Asn	Ile	Phe	Val	Ala
1400						1405					1410			
Leu	Ile	Ile	Ile	Thr	Phe	Gln	Glu	Gln	Gly	Asp	Lys	Val	Met	Ser
1415						1420					1425			
Glu	Cys	Ser	Leu	Glu	Lys	Asn	Glu	Arg	Ala	Cys	Ile	Asp	Phe	Ala
1430						1435					1440			
Ile	Ser	Ala	Lys	Pro	Leu	Thr	Arg	Tyr	Met	Pro	Gln	Asn	Arg	Gln
1445						1450					1455			
Ser	Phe	Gln	Tyr	Lys	Thr	Trp	Thr	Phe	Val	Val	Ser	Pro	Pro	Phe
1460						1465					1470			
Glu	Tyr	Phe	Ile	Met	Ala	Met	Ile	Ala	Leu	Asn	Thr	Val	Val	Leu
1475						1480					1485			
Met	Met	Lys	Phe	Tyr	Asp	Ala	Pro	Tyr	Glu	Tyr	Glu	Leu	Met	Leu
1490						1495					1500			
Lys	Cys	Leu	Asn	Ile	Val	Phe	Thr	Ser	Met	Phe	Ser	Met	Glu	Cys
1505						1510					1515			
Val	Leu	Lys	Ile	Ile	Ala	Phe	Gly	Val	Leu	Asn	Tyr	Phe	Arg	Asp
1520						1525					1530			
Ala	Trp	Asn	Val	Phe	Asp	Phe	Val	Thr	Val	Leu	Gly	Ser	Ile	Thr
1535						1540					1545			

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Asp	Ile	Leu	Val	Thr	Glu	Ile	Ala	Glu	Thr	Asn	Asn	Phe	Ile	Asn
	1550					1555					1560			
Leu	Ser	Phe	Leu	Arg	Leu	Phe	Arg	Ala	Ala	Arg	Leu	Ile	Lys	Leu
	1565					1570					1575			
Leu	Arg	Gln	Gly	Tyr	Thr	Ile	Arg	Ile	Leu	Leu	Trp	Thr	Phe	Val
	1580					1585					1590			
Gln	Ser	Phe	Lys	Ala	Leu	Pro	Tyr	Val	Cys	Leu	Leu	Ile	Ala	Met
	1595					1600					1605			
Leu	Phe	Phe	Ile	Tyr	Ala	Ile	Ile	Gly	Met	Gln	Val	Phe	Gly	Asn
	1610					1615					1620			
Ile	Ala	Leu	Asp	Asp	Asp	Thr	Ser	Ile	Asn	Arg	His	Asn	Asn	Phe
	1625					1630					1635			
Arg	Thr	Phe	Leu	Gln	Ala	Leu	Met	Leu	Leu	Phe	Arg	Ser	Ala	Thr
	1640					1645					1650			
Gly	Glu	Ala	Trp	His	Glu	Ile	Met	Leu	Ser	Cys	Leu	Ser	Asn	Gln
	1655					1660					1665			
Ala	Cys	Asp	Glu	Gln	Ala	Asn	Ala	Thr	Glu	Cys	Gly	Ser	Asp	Phe
	1670					1675					1680			
Ala	Tyr	Phe	Tyr	Phe	Val	Ser	Phe	Ile	Phe	Leu	Cys	Ser	Phe	Leu
	1685					1690					1695			
Met	Leu	Asn	Leu	Phe	Val	Ala	Val	Ile	Met	Asp	Asn	Phe	Glu	Tyr
	1700					1705					1710			
Leu	Thr	Arg	Asp	Ser	Ser	Ile	Leu	Gly	Pro	His	His	Leu	Asp	Glu
	1715					1720					1725			
Phe	Ile	Arg	Val	Trp	Ala	Glu	Tyr	Asp	Pro	Ala	Ala	Cys	Gly	Arg
	1730					1735					1740			
Ile	Ser	Tyr	Asn	Asp	Met	Phe	Glu	Met	Leu	Lys	His	Met	Ser	Pro
	1745					1750					1755			
Pro	Leu	Gly	Leu	Gly	Lys	Lys	Cys	Pro	Ala	Arg	Val	Ala	Tyr	Lys
	1760					1765					1770			
Arg	Leu	Val	Arg	Met	Asn	Met	Pro	Ile	Ser	Asn	Glu	Asp	Met	Thr
	1775					1780					1785			

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Val	His	Phe	Thr	Ser	Thr	Leu	Met	Ala	Leu	Ile	Arg	Thr	Ala	Leu
	1790					1795					1800			
Glu	Ile	Lys	Leu	Ala	Pro	Ala	Gly	Thr	Lys	Gln	His	Gln	Cys	Asp
	1805					1810					1815			
Ala	Glu	Leu	Arg	Lys	Glu	Ile	Ser	Val	Val	Trp	Ala	Asn	Leu	Pro
	1820					1825					1830			
Gln	Lys	Thr	Leu	Asp	Leu	Leu	Val	Pro	Pro	His	Lys	Pro	Asp	Glu
	1835					1840					1845			
Met	Thr	Val	Gly	Lys	Val	Tyr	Ala	Ala	Leu	Met	Ile	Phe	Asp	Phe
	1850					1855					1860			
Tyr	Lys	Gln	Asn	Lys	Thr	Thr	Arg	Asp	Gln	Met	Gln	Gln	Ala	Pro
	1865					1870					1875			
Gly	Gly	Leu	Ser	Gln	Met	Gly	Pro	Val	Ser	Leu	Phe	His	Pro	Leu
	1880					1885					1890			
Lys	Ala	Thr	Leu	Glu	Gln	Thr	Gln	Pro	Ala	Val	Leu	Arg	Gly	Ala
	1895					1900					1905			
Arg	Val	Phe	Leu	Arg	Gln	Lys	Ser	Ser	Thr	Ser	Leu	Ser	Asn	Gly
	1910					1915					1920			
Gly	Ala	Ile	Gln	Asn	Gln	Glu	Ser	Gly	Ile	Lys	Glu	Ser	Val	Ser
	1925					1930					1935			
Trp	Gly	Thr	Gln	Arg	Thr	Gln	Asp	Ala	Pro	His	Glu	Ala	Arg	Pro
	1940					1945					1950			
Pro	Leu	Glu	Arg	Gly	His	Ser	Thr	Glu	Ile	Pro	Val	Gly	Arg	Ser
	1955					1960					1965			
Gly	Ala	Leu	Ala	Val	Asp	Val	Gln	Met	Gln	Ser	Ile	Thr	Arg	Arg
	1970					1975					1980			
Gly	Pro	Asp	Gly	Glu	Pro	Gln	Pro	Gly	Leu	Glu	Ser	Gln	Gly	Arg
	1985					1990					1995			
Ala	Ala	Ser	Met	Pro	Arg	Leu	Ala	Ala	Glu	Thr	Gln	Pro	Val	Thr
	2000					2005					2010			
Asp	Ala	Ser	Pro	Met	Lys	Arg	Ser	Ile	Ser	Thr	Leu	Ala	Gln	Arg

2015

2020

Pro Arg 2030	Gly Thr His Leu	Cys 2035	Ser Thr Thr Pro	Asp 2040	Arg Pro Pro
Pro Ser 2045	Gln Ala Ser Ser	His 2050	His His His His	Arg 2055	Cys His Arg
Arg Arg 2060	Asp Arg Lys Gln	Arg 2065	Ser Leu Glu Lys	Gly 2070	Pro Ser Leu
Ser Ala 2075	Asp Met Asp Gly	Ala 2080	Pro Ser Ser Ala	Val 2085	Gly Pro Gly
Leu Pro 2090	Pro Gly Glu Gly	Pro 2095	Thr Gly Cys Arg	Arg 2100	Glu Arg Glu
Arg Arg 2105	Gln Glu Arg Gly	Arg 2110	Ser Gln Glu Arg	Arg 2115	Gln Pro Ser
Ser Ser 2120	Ser Ser Glu Lys	Gln 2125	Arg Phe Tyr Ser	Cys 2130	Asp Arg Phe
Gly Gly 2135	Arg Glu Pro Pro	Lys 2140	Pro Lys Pro Ser	Leu 2145	Ser Ser His
Pro Thr 2150	Ser Pro Thr Ala	Gly 2155	Gln Glu Pro Gly	Pro 2160	His Pro Gln
Gly Ser 2165	Gly Ser Val Asn	Gly 2170	Ser Pro Leu Leu	Ser 2175	Thr Ser Gly
Ala Ser 2180	Thr Pro Gly Arg	Gly 2185	Gly Arg Arg Gln	Leu 2190	Pro Gln Thr
Pro Leu 2195	Thr Pro Arg Pro	Ser 2200	Ile Thr Tyr Lys	Thr 2205	Ala Asn Ser
Ser Pro 2210	Ile His Phe Ala	Gly 2215	Ala Gln Thr Ser	Leu 2220	Pro Ala Phe
Ser Pro 2225	Gly Arg Leu Ser	Arg 2230	Gly Leu Ser Glu	His 2235	Asn Ala Leu
Leu Gln 2240	Arg Asp Pro Leu	Ser 2245	Gln Pro Leu Ala	Pro 2250	Gly Ser Arg

Ile Gly Ser Asp Pro Tyr Leu Gly Gln Arg Leu Asp Ser Glu Ala
2255 2260 2265

Ser Val His Ala Leu Pro Glu Asp Thr Leu Thr Phe Glu Glu Ala
2270 2275 2280

Val Ala Thr Asn Ser Gly Arg Ser Ser Arg Thr Ser Tyr Val Ser
2285 2290 2295

Ser Leu Thr Ser Gln Ser His Pro Leu Arg Arg Val Pro Asn Gly
2300 2305 2310

Tyr His Cys Thr Leu Gly Leu Ser Ser Gly Gly Arg Ala Arg His
2315 2320 2325

Ser Tyr His His Pro Asp Gln Asp His Trp Cys
2330 2335

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<211> 2505

<212> PRT

<213> Homo sapiens

<400> 9

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Ser Gly Ala Ala Ala Gly Val Val Val Gly Ser Gly Gly Gly Arg Gly
20 25 30

Ala Gly Gly Ser Arg Gln Gly Gly Gln Pro Gly Ala Gln Arg Met Tyr
35 40 45

Lys Gln Ser Met Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro
50 55 60

Ile Pro Val Arg Gln Asn Cys Leu Thr Val Asn Arg Ser Leu Phe Leu
65 70 75 80

Phe Ser Glu Asp Asn Val Val Arg Lys Tyr Ala Lys Lys Ile Thr Glu
85 90 95

Trp Pro Pro Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys
100 105 110

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Ile Val Leu Ala Leu Glu Gln His Leu Pro Asp Asp Asp Lys Thr Pro
115 120 125

Met Ser Glu Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe
130 135 140

Cys Phe Glu Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Ala Phe His
145 150 155 160

Lys Gly Ser Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val
165 170 175

Val Leu Thr Gly Ile Leu Ala Thr Val Gly Thr Glu Phe Asp Leu Arg
180 185 190

Thr Leu Arg Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly
195 200 205

Ile Pro Ser Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Ile
210 215 220

Pro Leu Leu Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Ile Phe
225 230 235 240

Ala Ile Ile Gly Leu Glu Phe Tyr Met Gly Lys Phe His Thr Thr Cys
245 250 255

Phe Glu Glu Gly Thr Asp Asp Ile Gln Gly Glu Ser Pro Ala Pro Cys
260 265 270

Gly Thr Glu Glu Pro Ala Arg Thr Cys Pro Asn Gly Thr Lys Cys Gln
275 280 285

Pro Tyr Trp Glu Gly Pro Asn Asn Gly Ile Thr Gln Phe Asp Asn Ile
290 295 300

Leu Phe Ala Val Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp
305 310 315 320

Thr Asp Leu Leu Tyr Asn Ser Asn Asp Ala Ser Gly Asn Thr Trp Asn
325 330 335

Trp Leu Tyr Phe Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu
340 345 350

Asn Leu Val Leu Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu
355 360 365

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Arg Val Glu Asn Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln
370 375 380

Ile Glu Arg Glu Leu Asn Gly Tyr Met Glu Trp Ile Ser Lys Ala Glu
385 390 395 400

Glu Val Ile Leu Ala Glu Asp Glu Thr Asp Gly Glu Gln Arg His Pro
405 410 415

Phe Asp Gly Ala Leu Arg Arg Thr Thr Ile Lys Lys Ser Lys Thr Asp
420 425 430

Leu Leu Asn Pro Glu Glu Ala Glu Asp Gln Leu Ala Asp Ile Ala Ser
435 440 445

Val Gly Ser Pro Phe Ala Arg Ala Ser Ile Lys Ser Ala Lys Leu Glu
450 455 460

Asn Ser Thr Phe Phe His Lys Lys Glu Arg Arg Met Arg Phe Tyr Ile
465 470 475 480

Arg Arg Met Val Lys Thr Gln Ala Phe Tyr Trp Thr Val Leu Ser Leu
485 490 495

Val Ala Leu Asn Thr Leu Cys Val Ala Ile Val His Tyr Asn Gln Pro
500 505 510

Glu Trp Leu Ser Asp Phe Leu Tyr Tyr Ala Glu Phe Ile Phe Leu Gly
515 520 525

Leu Phe Met Ser Glu Met Phe Ile Lys Met Tyr Gly Leu Gly Thr Arg
530 535 540

Pro Tyr Phe His Ser Ser Phe Asn Cys Phe Asp Cys Gly Val Ile Ile
545 550 555 560

Gly Ser Ile Phe Glu Val Ile Trp Ala Val Ile Lys Pro Gly Thr Ser
565 570 575

Phe Gly Ile Ser Val Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys
580 585 590

Val Thr Lys Tyr Trp Ala Ser Leu Arg Asn Leu Val Val Ser Leu Leu
595 600 605

Asn Ser Met Lys Ser Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe

610

615

620

Ile Val Val Phe Ala Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe
 625 630 635 640

Asn Phe Asp Glu Gly Thr Pro Pro Thr Asn Phe Asp Thr Phe Pro Ala
 645 650 655

Ala Ile Met Thr Val Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Glu
 660 665 670

Val Met Tyr Asp Gly Ile Lys Ser Gln Gly Gly Val Gln Gly Gly Met
 675 680 685

Val Phe Ser Ile Tyr Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr
 690 695 700

Leu Leu Asn Val Phe Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala
 705 710 715 720

Gln Glu Leu Thr Lys Asp Glu Gln Glu Glu Glu Glu Ala Ala Asn Gln
 725 730 735

Lys Leu Ala Leu Gln Lys Ala Lys Glu Val Ala Glu Val Ser Pro Leu
 740 745 750

Ser Ala Ala Asn Met Ser Ile Ala Val Lys Glu Gln Gln Lys Asn Gln
 755 760 765

Lys Pro Ala Lys Ser Val Trp Glu Gln Arg Thr Ser Glu Met Arg Lys
 770 775 780

Gln Asn Leu Leu Ala Ser Arg Glu Ala Leu Tyr Asn Glu Met Asp Pro
 785 790 795 800

Asp Glu Arg Trp Lys Ala Ala Tyr Thr Arg His Leu Arg Pro Asp Met
 805 810 815

Lys Thr His Leu Asp Arg Pro Leu Val Val Asp Pro Gln Glu Asn Arg
 820 825 830

Asn Asn Asn Thr Asn Lys Ser Arg Ala Ala Glu Pro Thr Val Asp Gln
 835 840 845

Arg Leu Gly Gln Gln Arg Ala Glu Asp Phe Leu Arg Lys Gln Ala Arg
 850 855 860

Tyr His Asp Arg Ala Arg Asp Pro Ser Gly Ser Ala Gly Leu Asp Ala
865 870 875 880

Arg Arg Pro Trp Ala Gly Ser Gln Glu Ala Glu Leu Ser Arg Glu Gly
885 890 895

Pro Tyr Gly Arg Glu Ser Asp His His Ala Arg Glu Gly Ser Leu Glu
900 905 910

Gln Pro Gly Phe Trp Glu Gly Glu Ala Glu Arg Gly Lys Ala Gly Asp
915 920 925

Pro His Arg Arg His Val His Arg Gln Gly Gly Ser Arg Glu Ser Arg
930 935 940

Ser Gly Ser Pro Arg Thr Gly Ala Asp Gly Glu His Arg Arg His Arg
945 950 955 960

Ala His Arg Arg Pro Gly Glu Glu Gly Pro Glu Asp Lys Ala Glu Arg
965 970 975

Arg Ala Arg His Arg Glu Gly Ser Arg Pro Ala Arg Gly Gly Glu Gly
980 985 990

Glu Gly Glu Gly Pro Asp Gly Gly Glu Arg Arg Arg Arg His Arg His
995 1000 1005

Gly Ala Pro Ala Thr Tyr Glu Gly Asp Ala Arg Arg Glu Asp Lys
1010 1015 1020

Glu Arg Arg His Arg Arg Arg Lys Glu Asn Gln Gly Ser Gly Val
1025 1030 1035

Pro Val Ser Gly Pro Asn Leu Ser Thr Thr Arg Pro Ile Gln Gln
1040 1045 1050

Asp Leu Gly Arg Gln Asp Pro Pro Leu Ala Glu Asp Ile Asp Asn
1055 1060 1065

Met Lys Asn Asn Lys Leu Ala Thr Ala Glu Ser Ala Ala Pro His
1070 1075 1080

Gly Ser Leu Gly His Ala Gly Leu Pro Gln Ser Pro Ala Lys Met
1085 1090 1095

Gly Asn Ser Thr Asp Pro Gly Pro Met Leu Ala Ile Pro Ala Met
1100 1105 1110

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Ala Thr 1115	Asn Pro Gln Asn	Ala 1120	Ala Ser Arg Arg	Thr 1125	Pro Asn Asn
Pro Gly 1130	Asn Pro Ser Asn	Pro 1135	Gly Pro Pro Lys	Thr 1140	Pro Glu Asn
Ser Leu 1145	Ile Val Thr Asn	Pro 1150	Ser Gly Thr Gln	Thr 1155	Asn Ser Ala
Lys Thr 1160	Ala Arg Lys Pro	Asp 1165	His Thr Thr Val	Asp 1170	Ile Pro Pro
Ala Cys 1175	Pro Pro Pro Leu	Asn 1180	His Thr Val Val	Gln 1185	Val Asn Lys
Asn Ala 1190	Asn Pro Asp Pro	Leu 1195	Pro Lys Lys Glu	Glu 1200	Glu Lys Lys
Glu Glu 1205	Glu Glu Asp Asp	Arg 1210	Gly Glu Asp Gly	Pro 1215	Lys Pro Met
Pro Pro 1220	Tyr Ser Ser Met	Phe 1225	Ile Leu Ser Thr	Thr 1230	Asn Pro Leu
Arg Arg 1235	Leu Cys His Tyr	Ile 1240	Leu Asn Leu Arg	Tyr 1245	Phe Glu Met
Cys Ile 1250	Leu Met Val Ile	Ala 1255	Met Ser Ser Ile	Ala 1260	Leu Ala Ala
Glu Asp 1265	Pro Val Gln Pro	Asn 1270	Ala Pro Arg Asn	Asn 1275	Val Leu Arg
Tyr Phe 1280	Asp Tyr Val Phe	Thr 1285	Gly Val Phe Thr	Phe 1290	Glu Met Val
Ile Lys 1295	Met Ile Asp Leu	Gly 1300	Leu Val Leu His	Gln 1305	Gly Ala Tyr
Phe Arg 1310	Asp Leu Trp Asn	Ile 1315	Leu Asp Phe Ile	Val 1320	Val Ser Gly
Ala Leu 1325	Val Ala Phe Ala	Phe 1330	Thr Gly Asn Ser	Lys 1335	Gly Lys Asp
Ile Asn 1340	Thr Ile Lys Ser	Leu 1345	Arg Val Leu Arg	Val 1350	Leu Arg Pro

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Leu Lys Thr Ile Lys Arg Leu Pro Lys Leu Lys Ala Val Phe Asp
 1355 1360 1365
 Cys Val Val Asn Ser Leu Lys Asn Val Phe Asn Ile Leu Ile Val
 1370 1375 1380
 Tyr Met Leu Phe Met Phe Ile Phe Ala Val Val Ala Val Gln Leu
 1385 1390 1395
 Phe Lys Gly Lys Phe Phe His Cys Thr Asp Glu Ser Lys Glu Phe
 1400 1405 1410
 Glu Lys Asp Cys Arg Gly Lys Tyr Leu Leu Tyr Glu Lys Asn Glu
 1415 1420 1425
 Val Lys Ala Arg Asp Arg Glu Trp Lys Lys Tyr Glu Phe His Tyr
 1430 1435 1440
 Asp Asn Val Leu Trp Ala Leu Leu Thr Leu Phe Thr Val Ser Thr
 1445 1450 1455
 Gly Glu Gly Trp Pro Gln Val Leu Lys His Ser Val Asp Ala Thr
 1460 1465 1470
 Phe Glu Asn Gln Gly Pro Ser Pro Gly Tyr Arg Met Glu Met Ser
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 Ile Phe Tyr Val Val Tyr Phe Val Val Phe Pro Phe Phe Phe Val
 1490 1495 1500
 Asn Ile Phe Val Ala Leu Ile Ile Ile Thr Phe Gln Glu Gln Gly
 1505 1510 1515
 Asp Lys Met Met Glu Glu Tyr Ser Leu Glu Lys Asn Glu Arg Ala
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 Cys Ile Asp Phe Ala Ile Ser Ala Lys Pro Leu Thr Arg His Met
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 Pro Gln Asn Lys Gln Ser Phe Gln Tyr Arg Met Trp Gln Phe Val
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 Val Ser Pro Pro Phe Glu Tyr Thr Ile Met Ala Met Ile Ala Leu
 1565 1570 1575
 Asn Thr Ile Val Leu Met Met Lys Phe Tyr Gly Ala Ser Val Ala

1580		1585	1590
Tyr Glu Asn Ala Leu Arg Val Phe Asn Ile Val Phe Thr Ser Leu	1595	1600	1605
Phe Ser Leu Glu Cys Val Leu Lys Val Met Ala Phe Gly Ile Leu	1610	1615	1620
Asn Tyr Phe Arg Asp Ala Trp Asn Ile Phe Asp Phe Val Thr Val	1625	1630	1635
Leu Gly Ser Ile Thr Asp Ile Leu Val Thr Glu Phe Gly Asn Asn	1640	1645	1650
Phe Ile Asn Leu Ser Phe Leu Arg Leu Phe Arg Ala Ala Arg Leu	1655	1660	1665
Ile Lys Leu Leu Arg Gln Gly Tyr Thr Ile Arg Ile Leu Leu Trp	1670	1675	1680
Thr Phe Val Gln Ser Phe Lys Ala Leu Pro Tyr Val Cys Leu Leu	1685	1690	1695
Ile Ala Met Leu Phe Phe Ile Tyr Ala Ile Ile Gly Met Gln Val	1700	1705	1710
Phe Gly Asn Ile Gly Ile Asp Val Glu Asp Glu Asp Ser Asp Glu	1715	1720	1725
Asp Glu Phe Gln Ile Thr Glu His Asn Asn Phe Arg Thr Phe Phe	1730	1735	1740
Gln Ala Leu Met Leu Leu Phe Arg Ser Ala Thr Gly Glu Ala Trp	1745	1750	1755
His Asn Ile Met Leu Ser Cys Leu Ser Gly Lys Pro Cys Asp Lys	1760	1765	1770
Asn Ser Gly Ile Leu Thr Arg Glu Cys Gly Asn Glu Phe Ala Tyr	1775	1780	1785
Phe Tyr Phe Val Ser Phe Ile Phe Leu Cys Ser Phe Leu Met Leu	1790	1795	1800
Asn Leu Phe Val Ala Val Ile Met Asp Asn Phe Glu Tyr Leu Thr	1805	1810	1815

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Arg	Asp	Ser	Ser	Ile	Leu	Gly	Pro	His	His	Leu	Asp	Glu	Tyr	Val
	1820					1825					1830			
Arg	Val	Trp	Ala	Glu	Tyr	Asp	Pro	Ala	Ala	Trp	Gly	Arg	Met	Pro
	1835					1840					1845			
Tyr	Leu	Asp	Met	Tyr	Gln	Met	Leu	Arg	His	Met	Ser	Pro	Pro	Leu
	1850					1855					1860			
Gly	Leu	Gly	Lys	Lys	Cys	Pro	Ala	Arg	Val	Ala	Tyr	Lys	Arg	Leu
	1865					1870					1875			
Leu	Arg	Met	Asp	Leu	Pro	Val	Ala	Asp	Asp	Asn	Thr	Val	His	Phe
	1880					1885					1890			
Asn	Ser	Thr	Leu	Met	Ala	Leu	Ile	Arg	Thr	Ala	Leu	Asp	Ile	Lys
	1895					1900					1905			
Ile	Ala	Lys	Gly	Gly	Ala	Asp	Lys	Gln	Gln	Met	Asp	Ala	Glu	Leu
	1910					1915					1920			
Arg	Lys	Glu	Met	Met	Ala	Ile	Trp	Pro	Asn	Leu	Ser	Gln	Lys	Thr
	1925					1930					1935			
Leu	Asp	Leu	Leu	Val	Thr	Pro	His	Lys	Ser	Thr	Asp	Leu	Thr	Val
	1940					1945					1950			
Gly	Lys	Ile	Tyr	Ala	Ala	Met	Met	Ile	Met	Glu	Tyr	Tyr	Arg	Gln
	1955					1960					1965			
Ser	Lys	Ala	Lys	Lys	Leu	Gln	Ala	Met	Arg	Glu	Glu	Gln	Asp	Arg
	1970					1975					1980			
Thr	Pro	Leu	Met	Phe	Gln	Arg	Met	Glu	Pro	Pro	Ser	Pro	Thr	Gln
	1985					1990					1995			
Glu	Gly	Gly	Pro	Gly	Gln	Asn	Ala	Leu	Pro	Ser	Thr	Gln	Leu	Asp
	2000					2005					2010			
Pro	Gly	Gly	Ala	Leu	Met	Ala	His	Glu	Ser	Gly	Leu	Lys	Glu	Ser
	2015					2020					2025			
Pro	Ser	Trp	Val	Thr	Gln	Arg	Ala	Gln	Glu	Met	Phe	Gln	Lys	Thr
	2030					2035					2040			
Gly	Thr	Trp	Ser	Pro	Glu	Gln	Gly	Pro	Pro	Thr	Asp	Met	Pro	Asn
	2045					2050					2055			

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Ser Gln Pro Asn Ser Gln Ser Val Glu Met Arg Glu Met Gly Arg
2060 2065 2070

Asp Gly Tyr Ser Asp Ser Glu His Tyr Leu Pro Met Glu Gly Gln
2075 2080 2085

Gly Arg Ala Ala Ser Met Pro Arg Leu Pro Ala Glu Asn Gln Arg
2090 2095 2100

Arg Arg Gly Arg Pro Arg Gly Asn Asn Leu Ser Thr Ile Ser Asp
2105 2110 2115

Thr Ser Pro Met Lys Arg Ser Ala Ser Val Leu Gly Pro Lys Ala
2120 2125 2130

Arg Arg Leu Asp Asp Tyr Ser Leu Glu Arg Val Pro Pro Glu Glu
2135 2140 2145

Asn Gln Arg His His Gln Arg Arg Arg Asp Arg Ser His Arg Ala
2150 2155 2160

Ser Glu Arg Ser Leu Gly Arg Tyr Thr Asp Val Asp Thr Gly Leu
2165 2170 2175

Gly Thr Asp Leu Ser Met Thr Thr Gln Ser Gly Asp Leu Pro Ser
2180 2185 2190

Lys Glu Arg Asp Gln Glu Arg Gly Arg Pro Lys Asp Arg Lys His
2195 2200 2205

Arg Gln His His His His His His His His His His Pro Pro Pro
2210 2215 2220

Pro Asp Lys Asp Arg Tyr Ala Gln Glu Arg Pro Asp His Gly Arg
2225 2230 2235

Ala Arg Ala Arg Asp Gln Arg Trp Ser Arg Ser Pro Ser Glu Gly
2240 2245 2250

Arg Glu His Met Ala His Arg Gln Gly Ser Ser Ser Val Ser Gly
2255 2260 2265

Ser Pro Ala Pro Ser Thr Ser Gly Thr Ser Thr Pro Arg Arg Gly
2270 2275 2280

Arg Arg Gln Leu Pro Gln Thr Pro Ser Thr Pro Arg Pro His Val
2285 2290 2295

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Ser Tyr Ser Pro Val Ile Arg Lys Ala Gly Gly Ser Gly Pro Pro
2300 2305 2310

Gln Gln Gln Gln Gln Gln Gln Gln Gln Ala Val Ala Arg
2315 2320 2325

Pro Gly Arg Ala Ala Thr Ser Gly Pro Arg Arg Tyr Pro Gly Pro
2330 2335 2340

Thr Ala Glu Pro Leu Ala Gly Asp Arg Pro Pro Thr Gly Gly His
2345 2350 2355

Ser Ser Gly Arg Ser Pro Arg Met Glu Arg Arg Val Pro Gly Pro
2360 2365 2370

Ala Arg Ser Glu Ser Pro Arg Ala Cys Arg His Gly Gly Ala Arg
2375 2380 2385

Trp Pro Ala Ser Gly Pro His Val Ser Glu Gly Pro Pro Gly Pro
2390 2395 2400

Arg His His Gly Tyr Tyr Arg Gly Ser Asp Tyr Asp Glu Ala Asp
2405 2410 2415

Gly Pro Gly Ser Gly Gly Gly Glu Glu Ala Met Ala Gly Ala Tyr
2420 2425 2430

Asp Ala Pro Pro Pro Val Arg His Ala Ser Ser Gly Ala Thr Gly
2435 2440 2445

Arg Ser Pro Arg Thr Pro Arg Ala Ser Gly Pro Ala Cys Ala Ser
2450 2455 2460

Pro Ser Arg His Gly Arg Arg Leu Pro Asn Gly Tyr Tyr Pro Ala
2465 2470 2475

His Gly Leu Ala Arg Pro Arg Gly Pro Gly Ser Arg Lys Gly Leu
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<212> PRT

<213> Homo sapiens

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35 40 45

Lys Gln Ser Met Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro
50 55 60

Ile Pro Val Arg Gln Asn Cys Leu Thr Val Asn Arg Ser Leu Phe Leu
65 70 75 80

Phe Ser Glu Asp Asn Val Val Arg Lys Tyr Ala Lys Lys Ile Thr Glu
85 90 95

Trp Pro Pro Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys
100 105 110

Ile Val Leu Ala Leu Glu Gln His Leu Pro Asp Asp Asp Lys Thr Pro
115 120 125

Met Ser Glu Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe
130 135 140

Cys Phe Glu Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Ala Phe His
145 150 155 160

Lys Gly Ser Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val
165 170 175

Val Leu Thr Gly Ile Leu Ala Thr Val Gly Thr Glu Phe Asp Leu Arg
180 185 190

Thr Leu Arg Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly
195 200 205

Ile Pro Ser Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Ile
210 215 220

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Pro Leu Leu Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Ile Phe
225 230 235 240

Ala Ile Ile Gly Leu Glu Phe Tyr Met Gly Lys Phe His Thr Thr Cys
245 250 255

Phe Glu Glu Gly Thr Asp Asp Ile Gln Gly Glu Ser Pro Ala Pro Cys
260 265 270

Gly Thr Glu Glu Pro Ala Arg Thr Cys Pro Asn Gly Thr Lys Cys Gln
275 280 285

Pro Tyr Trp Glu Gly Pro Asn Asn Gly Ile Thr Gln Phe Asp Asn Ile
290 295 300

Leu Phe Ala Val Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp
305 310 315 320

Thr Asp Leu Leu Tyr Asn Ser Asn Asp Ala Ser Gly Asn Thr Trp Asn
325 330 335

Trp Leu Tyr Phe Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu
340 345 350

Asn Leu Val Leu Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu
355 360 365

Arg Val Glu Asn Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln
370 375 380

Ile Glu Arg Glu Leu Asn Gly Tyr Met Glu Trp Ile Ser Lys Ala Glu
385 390 395 400

Glu Val Ile Leu Ala Glu Asp Glu Thr Asp Gly Glu Gln Arg His Pro
405 410 415

Phe Asp Gly Ala Leu Arg Arg Thr Thr Ile Lys Lys Ser Lys Thr Asp
420 425 430

Leu Leu Asn Pro Glu Glu Ala Glu Asp Gln Leu Ala Asp Ile Ala Ser
435 440 445

Val Gly Ser Pro Phe Ala Arg Ala Ser Ile Lys Ser Ala Lys Leu Glu
450 455 460

Asn Ser Thr Phe Phe His Lys Lys Glu Arg Arg Met Arg Phe Tyr Ile
465 470 475 480

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Arg Arg Met Val Lys Thr Gln Ala Phe Tyr Trp Thr Val Leu Ser Leu
485 490 495

Val Ala Leu Asn Thr Leu Cys Val Ala Ile Val His Tyr Asn Gln Pro
500 505 510

Glu Trp Leu Ser Asp Phe Leu Tyr Tyr Ala Glu Phe Ile Phe Leu Gly
515 520 525

Leu Phe Met Ser Glu Met Phe Ile Lys Met Tyr Gly Leu Gly Thr Arg
530 535 540

Pro Tyr Phe His Ser Ser Phe Asn Cys Phe Asp Cys Gly Val Ile Ile
545 550 555 560

Gly Ser Ile Phe Glu Val Ile Trp Ala Val Ile Lys Pro Gly Thr Ser
565 570 575

Phe Gly Ile Ser Val Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys
580 585 590

Val Thr Lys Tyr Trp Ala Ser Leu Arg Asn Leu Val Val Ser Leu Leu
595 600 605

Asn Ser Met Lys Ser Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe
610 615 620

Ile Val Val Phe Ala Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe
625 630 635 640

Asn Phe Asp Glu Gly Thr Pro Pro Thr Asn Phe Asp Thr Phe Pro Ala
645 650 655

Ala Ile Met Thr Val Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Glu
660 665 670

Val Met Tyr Asp Gly Ile Lys Ser Gln Gly Gly Val Gln Gly Gly Met
675 680 685

Val Phe Ser Ile Tyr Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr
690 695 700

Leu Leu Asn Val Phe Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala
705 710 715 720

Gln Glu Leu Thr Lys Asp Glu Gln Glu Glu Glu Glu Ala Ala Asn Gln
725 730 735

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Lys Leu Ala Leu Gln Lys Ala Lys Glu Val Ala Glu Val Ser Pro Leu
740 745 750

Ser Ala Ala Asn Met Ser Ile Ala Val Lys Glu Gln Gln Lys Asn Gln
755 760 765

Lys Pro Ala Lys Ser Val Trp Glu Gln Arg Thr Ser Glu Met Arg Lys
770 775 780

Gln Asn Leu Leu Ala Ser Arg Glu Ala Leu Tyr Asn Glu Met Asp Pro
785 790 795 800

Asp Glu Arg Trp Lys Ala Ala Tyr Thr Arg His Leu Arg Pro Asp Met
805 810 815

Lys Thr His Leu Asp Arg Pro Leu Val Val Asp Pro Gln Glu Asn Arg
820 825 830

Asn Asn Asn Thr Asn Lys Ser Arg Ala Ala Glu Pro Thr Val Asp Gln
835 840 845

Arg Leu Gly Gln Gln Arg Ala Glu Asp Phe Leu Arg Lys Gln Ala Arg
850 855 860

Tyr His Asp Arg Ala Arg Asp Pro Ser Gly Ser Ala Gly Leu Asp Ala
865 870 875 880

Arg Arg Pro Trp Ala Gly Ser Gln Glu Ala Glu Leu Ser Arg Glu Gly
885 890 895

Pro Tyr Gly Arg Glu Ser Asp His His Ala Arg Glu Gly Ser Leu Glu
900 905 910

Gln Pro Gly Phe Trp Glu Gly Glu Ala Glu Arg Gly Lys Ala Gly Asp
915 920 925

Pro His Arg Arg His Val His Arg Gln Gly Gly Ser Arg Glu Ser Arg
930 935 940

Ser Gly Ser Pro Arg Thr Gly Ala Asp Gly Glu His Arg Arg His Arg
945 950 955 960

Ala His Arg Arg Pro Gly Glu Glu Gly Pro Glu Asp Lys Ala Glu Arg
965 970 975

Arg Ala Arg His Arg Glu Gly Ser Arg Pro Ala Arg Gly Gly Glu Gly
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Glu	Gly	Glu	Gly	Pro	Asp	Gly	Gly	Glu	Arg	Arg	Arg	Arg	His	Arg	His
		995					1000					1005			
Gly	Ala	Pro	Ala	Thr	Tyr	Glu	Gly	Asp	Ala	Arg	Arg	Glu	Asp	Lys	
	1010					1015					1020				
Glu	Arg	Arg	His	Arg	Arg	Arg	Lys	Glu	Asn	Gln	Gly	Ser	Gly	Val	
	1025					1030					1035				
Pro	Val	Ser	Gly	Pro	Asn	Leu	Ser	Thr	Thr	Arg	Pro	Ile	Gln	Gln	
	1040					1045					1050				
Asp	Leu	Gly	Arg	Gln	Asp	Pro	Pro	Leu	Ala	Glu	Asp	Ile	Asp	Asn	
	1055					1060					1065				
Met	Lys	Asn	Asn	Lys	Leu	Ala	Thr	Ala	Glu	Ser	Ala	Ala	Pro	His	
	1070					1075					1080				
Gly	Ser	Leu	Gly	His	Ala	Gly	Leu	Pro	Gln	Ser	Pro	Ala	Lys	Met	
	1085					1090					1095				
Gly	Asn	Ser	Thr	Asp	Pro	Gly	Pro	Met	Leu	Ala	Ile	Pro	Ala	Met	
	1100					1105					1110				
Ala	Thr	Asn	Pro	Gln	Asn	Ala	Ala	Ser	Arg	Arg	Thr	Pro	Asn	Asn	
	1115					1120					1125				
Pro	Gly	Asn	Pro	Ser	Asn	Pro	Gly	Pro	Pro	Lys	Thr	Pro	Glu	Asn	
	1130					1135					1140				
Ser	Leu	Ile	Val	Thr	Asn	Pro	Ser	Gly	Thr	Gln	Thr	Asn	Ser	Ala	
	1145					1150					1155				
Lys	Thr	Ala	Arg	Lys	Pro	Asp	His	Thr	Thr	Val	Asp	Ile	Pro	Pro	
	1160					1165					1170				
Ala	Cys	Pro	Pro	Pro	Leu	Asn	His	Thr	Val	Val	Gln	Val	Asn	Lys	
	1175					1180					1185				
Asn	Ala	Asn	Pro	Asp	Pro	Leu	Pro	Lys	Lys	Glu	Glu	Glu	Lys	Lys	
	1190					1195					1200				
Glu	Glu	Glu	Glu	Asp	Asp	Arg	Gly	Glu	Asp	Gly	Pro	Lys	Pro	Met	
	1205					1210					1215				

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Pro	Pro	Tyr	Ser	Ser	Met	Phe	Ile	Leu	Ser	Thr	Thr	Asn	Pro	Leu
	1220					1225					1230			
Arg	Arg	Leu	Cys	His	Tyr	Ile	Leu	Asn	Leu	Arg	Tyr	Phe	Glu	Met
	1235					1240					1245			
Cys	Ile	Leu	Met	Val	Ile	Ala	Met	Ser	Ser	Ile	Ala	Leu	Ala	Ala
	1250					1255					1260			
Glu	Asp	Pro	Val	Gln	Pro	Asn	Ala	Pro	Arg	Asn	Asn	Val	Leu	Arg
	1265					1270					1275			
Tyr	Phe	Asp	Tyr	Val	Phe	Thr	Gly	Val	Phe	Thr	Phe	Glu	Met	Val
	1280					1285					1290			
Ile	Lys	Met	Ile	Asp	Leu	Gly	Leu	Val	Leu	His	Gln	Gly	Ala	Tyr
	1295					1300					1305			
Phe	Arg	Asp	Leu	Trp	Asn	Ile	Leu	Asp	Phe	Ile	Val	Val	Ser	Gly
	1310					1315					1320			
Ala	Leu	Val	Ala	Phe	Ala	Phe	Thr	Gly	Asn	Ser	Lys	Gly	Lys	Asp
	1325					1330					1335			
Ile	Asn	Thr	Ile	Lys	Ser	Leu	Arg	Val	Leu	Arg	Val	Leu	Arg	Pro
	1340					1345					1350			
Leu	Lys	Thr	Ile	Lys	Arg	Leu	Pro	Lys	Leu	Lys	Ala	Val	Phe	Asp
	1355					1360					1365			
Cys	Val	Val	Asn	Ser	Leu	Lys	Asn	Val	Phe	Asn	Ile	Leu	Ile	Val
	1370					1375					1380			
Tyr	Met	Leu	Phe	Met	Phe	Ile	Phe	Ala	Val	Val	Ala	Val	Gln	Leu
	1385					1390					1395			
Phe	Lys	Gly	Lys	Phe	Phe	His	Cys	Thr	Asp	Glu	Ser	Lys	Glu	Phe
	1400					1405					1410			
Glu	Lys	Asp	Cys	Arg	Gly	Lys	Tyr	Leu	Leu	Tyr	Glu	Lys	Asn	Glu
	1415					1420					1425			
Val	Lys	Ala	Arg	Asp	Arg	Glu	Trp	Lys	Lys	Tyr	Glu	Phe	His	Tyr
	1430					1435					1440			
Asp	Asn	Val	Leu	Trp	Ala	Leu	Leu	Thr	Leu	Phe	Thr	Val	Ser	Thr
	1445					1450					1455			

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Gly	Glu	Gly	Trp	Pro	Gln	Val	Leu	Lys	His	Ser	Val	Asp	Ala	Thr
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Phe	Glu	Asn	Gln	Gly	Pro	Ser	Pro	Gly	Tyr	Arg	Met	Glu	Met	Ser
1475						1480					1485			
Ile	Phe	Tyr	Val	Val	Tyr	Phe	Val	Val	Phe	Pro	Phe	Phe	Phe	Val
1490						1495					1500			
Asn	Ile	Phe	Val	Ala	Leu	Ile	Ile	Ile	Thr	Phe	Gln	Glu	Gln	Gly
1505						1510					1515			
Asp	Lys	Met	Met	Glu	Glu	Tyr	Ser	Leu	Glu	Lys	Asn	Glu	Arg	Ala
1520						1525					1530			
Cys	Ile	Asp	Phe	Ala	Ile	Ser	Ala	Lys	Pro	Leu	Thr	Arg	His	Met
1535						1540					1545			
Pro	Gln	Asn	Lys	Gln	Ser	Phe	Gln	Tyr	Arg	Met	Trp	Gln	Phe	Val
1550						1555					1560			
Val	Ser	Pro	Pro	Phe	Glu	Tyr	Thr	Ile	Met	Ala	Met	Ile	Ala	Leu
1565						1570					1575			
Asn	Thr	Ile	Val	Leu	Met	Met	Lys	Phe	Tyr	Gly	Ala	Ser	Val	Ala
1580						1585					1590			
Tyr	Glu	Asn	Ala	Leu	Arg	Val	Phe	Asn	Ile	Val	Phe	Thr	Ser	Leu
1595						1600					1605			
Phe	Ser	Leu	Glu	Cys	Val	Leu	Lys	Val	Met	Ala	Phe	Gly	Ile	Leu
1610						1615					1620			
Asn	Tyr	Phe	Arg	Asp	Ala	Trp	Asn	Ile	Phe	Asp	Phe	Val	Thr	Val
1625						1630					1635			
Leu	Gly	Ser	Ile	Thr	Asp	Ile	Leu	Val	Thr	Glu	Phe	Gly	Asn	Asn
1640						1645					1650			
Phe	Ile	Asn	Leu	Ser	Phe	Leu	Arg	Leu	Phe	Arg	Ala	Ala	Arg	Leu
1655						1660					1665			
Ile	Lys	Leu	Leu	Arg	Gln	Gly	Tyr	Thr	Ile	Arg	Ile	Leu	Leu	Trp
1670						1675					1680			
Thr	Phe	Val	Gln	Ser	Phe	Lys	Ala	Leu	Pro	Tyr	Val	Cys	Leu	Leu
1685						1690					1695			

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Asp	Glu	Phe	Gln	Ile	Thr	Glu	His	Asn	Asn	Phe	Arg	Thr	Phe	Phe
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Gln	Ala	Leu	Met	Leu	Leu	Phe	Arg	Ser	Ala	Thr	Gly	Glu	Ala	Trp
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Asn	Ser	Gly	Ile	Leu	Thr	Arg	Glu	Cys	Gly	Asn	Glu	Phe	Ala	Tyr
	1775					1780					1785			
Phe	Tyr	Phe	Val	Ser	Phe	Ile	Phe	Leu	Cys	Ser	Phe	Leu	Met	Leu
	1790					1795					1800			
Asn	Leu	Phe	Val	Ala	Val	Ile	Met	Asp	Asn	Phe	Glu	Tyr	Leu	Thr
	1805					1810					1815			
Arg	Asp	Ser	Ser	Ile	Leu	Gly	Pro	His	His	Leu	Asp	Glu	Tyr	Val
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Arg	Val	Trp	Ala	Glu	Tyr	Asp	Pro	Ala	Ala	Cys	Gly	Arg	Ile	His
	1835					1840					1845			
Tyr	Lys	Asp	Met	Tyr	Ser	Leu	Leu	Arg	Val	Ile	Ser	Pro	Pro	Leu
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Gly	Leu	Gly	Lys	Lys	Cys	Pro	His	Arg	Val	Ala	Cys	Lys	Arg	Leu
	1865					1870					1875			
Leu	Arg	Met	Asp	Leu	Pro	Val	Ala	Asp	Asp	Asn	Thr	Val	His	Phe
	1880					1885					1890			
Asn	Ser	Thr	Leu	Met	Ala	Leu	Ile	Arg	Thr	Ala	Leu	Asp	Ile	Lys
	1895					1900					1905			
Ile	Ala	Lys	Gly	Gly	Ala	Asp	Lys	Gln	Gln	Met	Asp	Ala	Glu	Leu
	1910					1915					1920			
Arg	Lys	Glu	Met	Met	Ala	Ile	Trp	Pro	Asn	Leu	Ser	Gln	Lys	Thr

1925		1930	
Leu Asp 1940	Leu Leu Val Thr	Pro 1945	His Lys Ser Thr Asp 1950
Gly Lys 1955	Ile Tyr Ala Ala	Met 1960	Met Ile Met Glu Tyr 1965
Ser Lys 1970	Ala Lys Lys Leu	Gln 1975	Ala Met Arg Glu Glu 1980
Thr Pro 1985	Leu Met Phe Gln	Arg 1990	Met Glu Pro Pro Ser 1995
Glu Gly 2000	Gly Pro Gly Gln	Asn 2005	Ala Leu Pro Ser Thr 2010
Pro Gly 2015	Gly Ala Leu Met	Ala 2020	His Glu Ser Gly Leu 2025
Pro Ser 2030	Trp Val Thr Gln	Arg 2035	Ala Gln Glu Met Phe 2040
Gly Thr 2045	Trp Ser Pro Glu	Gln 2050	Gly Pro Pro Thr Asp 2055
Ser Gln 2060	Pro Asn Ser Gln	Ser 2065	Val Glu Met Arg Glu 2070
Asp Gly 2075	Tyr Ser Asp Ser	Glu 2080	His Tyr Leu Pro Met 2085
Gly Arg 2090	Ala Ala Ser Met	Pro 2095	Arg Leu Pro Ala Glu 2100
Arg Arg 2105	Gly Arg Pro Arg	Gly 2110	Asn Asn Leu Ser Thr 2115
Thr Ser 2120	Pro Met Lys Arg	Ser 2125	Ala Ser Val Leu Gly 2130
Arg Arg 2135	Leu Asp Asp Tyr	Ser 2140	Leu Glu Arg Val Pro 2145
Asn Gln 2150	Arg His His Gln	Arg 2155	Arg Arg Asp Arg Ser 2160

Ser Glu Arg Ser Leu Gly Arg Tyr Thr Asp Val Asp Thr Gly Leu
2165 2170 2175

Gly Thr Asp Leu Ser Met Thr Thr Gln Ser Gly Asp Leu Pro Ser
2180 2185 2190

Lys Glu Arg Asp Gln Glu Arg Gly Arg Pro Lys Asp Arg Lys His
2195 2200 2205

Arg Gln His His His His His His His His His His Pro Pro Pro
2210 2215 2220

Pro Asp Lys Asp Arg Tyr Ala Gln Glu Arg Pro Asp His Gly Arg
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Ala Arg Ala Arg Asp Gln Arg Trp Ser Arg Ser Pro Ser Glu Gly
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Arg Glu His Met Ala His Arg Gln
2255 2260

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<212> PRT

<213> Homo sapiens

<400> 11

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35 40 45

Lys Gln Ser Met Ala Gln Arg Ala Arg Thr Met Ala Leu Tyr Asn Pro
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Ile Pro Val Arg Gln Asn Cys Leu Thr Val Asn Arg Ser Leu Phe Leu
65 70 75 80

Phe Ser Glu Asp Asn Val Val Arg Lys Tyr Ala Lys Lys Ile Thr Glu
85 90 95

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Trp Pro Pro Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys
100 105 110

Ile Val Leu Ala Leu Glu Gln His Leu Pro Asp Asp Asp Lys Thr Pro
115 120 125

Met Ser Glu Arg Leu Asp Asp Thr Glu Pro Tyr Phe Ile Gly Ile Phe
130 135 140

Cys Phe Glu Ala Gly Ile Lys Ile Ile Ala Leu Gly Phe Ala Phe His
145 150 155 160

Lys Gly Ser Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Val Val
165 170 175

Val Leu Thr Gly Ile Leu Ala Thr Val Gly Thr Glu Phe Asp Leu Arg
180 185 190

Thr Leu Arg Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly
195 200 205

Ile Pro Ser Leu Gln Val Val Leu Lys Ser Ile Met Lys Ala Met Ile
210 215 220

Pro Leu Leu Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu Ile Phe
225 230 235 240

Ala Ile Ile Gly Leu Glu Phe Tyr Met Gly Lys Phe His Thr Thr Cys
245 250 255

Phe Glu Glu Gly Thr Asp Asp Ile Gln Gly Glu Ser Pro Ala Pro Cys
260 265 270

Gly Thr Glu Glu Pro Ala Arg Thr Cys Pro Asn Gly Thr Lys Cys Gln
275 280 285

Pro Tyr Trp Glu Gly Pro Asn Asn Gly Ile Thr Gln Phe Asp Asn Ile
290 295 300

Leu Phe Ala Val Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp
305 310 315 320

Thr Asp Leu Leu Tyr Asn Ser Asn Asp Ala Ser Gly Asn Thr Trp Asn
325 330 335

Trp Leu Tyr Phe Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Met Leu
340 345 350

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Asn Leu Val Leu Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu
 355 360 365
 Arg Val Glu Asn Arg Arg Ala Phe Leu Lys Leu Arg Arg Gln Gln Gln
 370 375 380
 Ile Glu Arg Glu Leu Asn Gly Tyr Met Glu Trp Ile Ser Lys Ala Glu
 385 390 395 400
 Glu Val Ile Leu Ala Glu Asp Glu Thr Asp Gly Glu Gln Arg His Pro
 405 410 415
 Phe Asp Gly Ala Leu Arg Arg Thr Thr Ile Lys Lys Ser Lys Thr Asp
 420 425 430
 Leu Leu Asn Pro Glu Glu Ala Glu Asp Gln Leu Ala Asp Ile Ala Ser
 435 440 445
 Val Gly Ser Pro Phe Ala Arg Ala Ser Ile Lys Ser Ala Lys Leu Glu
 450 455 460
 Asn Ser Thr Phe Phe His Lys Lys Glu Arg Arg Met Arg Phe Tyr Ile
 465 470 475 480
 Arg Arg Met Val Lys Thr Gln Ala Phe Tyr Trp Thr Val Leu Ser Leu
 485 490 495
 Val Ala Leu Asn Thr Leu Cys Val Ala Ile Val His Tyr Asn Gln Pro
 500 505 510
 Glu Trp Leu Ser Asp Phe Leu Tyr Tyr Ala Glu Phe Ile Phe Leu Gly
 515 520 525
 Leu Phe Met Ser Glu Met Phe Ile Lys Met Tyr Gly Leu Gly Thr Arg
 530 535 540
 Pro Tyr Phe His Ser Ser Phe Asn Cys Phe Asp Cys Gly Val Ile Ile
 545 550 555 560
 Gly Ser Ile Phe Glu Val Ile Trp Ala Val Ile Lys Pro Gly Thr Ser
 565 570 575
 Phe Gly Ile Ser Val Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys
 580 585 590
 Val Thr Lys Tyr Trp Ala Ser Leu Arg Asn Leu Val Val Ser Leu Leu
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595

600

605

Asn Ser Met Lys Ser Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe
610 615 620

Ile Val Val Phe Ala Leu Leu Gly Met Gln Leu Phe Gly Gly Gln Phe
625 630 635 640

Asn Phe Asp Glu Gly Thr Pro Pro Thr Asn Phe Asp Thr Phe Pro Ala
645 650 655

Ala Ile Met Thr Val Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Glu
660 665 670

Val Met Tyr Asp Gly Ile Lys Ser Gln Gly Gly Val Gln Gly Gly Met
675 680 685

Val Phe Ser Ile Tyr Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr
690 695 700

Leu Leu Asn Val Phe Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala
705 710 715 720

Gln Glu Leu Thr Lys Asp Glu Gln Glu Glu Glu Ala Ala Asn Gln
725 730 735

Lys Leu Ala Leu Gln Lys Ala Lys Glu Val Ala Glu Val Ser Pro Leu
740 745 750

Ser Ala Ala Asn Met Ser Ile Ala Val Lys Glu Gln Gln Lys Asn Gln
755 760 765

Lys Pro Ala Lys Ser Val Trp Glu Gln Arg Thr Ser Glu Met Arg Lys
770 775 780

Gln Asn Leu Leu Ala Ser Arg Glu Ala Leu Tyr Asn Glu Met Asp Pro
785 790 795 800

Asp Glu Arg Trp Lys Ala Ala Tyr Thr Arg His Leu Arg Pro Asp Met
805 810 815

Lys Thr His Leu Asp Arg Pro Leu Val Val Asp Pro Gln Glu Asn Arg
820 825 830

Asn Asn Asn Thr Asn Lys Ser Arg Ala Ala Glu Pro Thr Val Asp Gln
835 840 845

Arg Leu Gly Gln Gln Arg Ala Glu Asp Phe Leu Arg Lys Gln Ala Arg
 850 855 860

Tyr His Asp Arg Ala Arg Asp Pro Ser Gly Ser Ala Gly Leu Asp Ala
 865 870 875 880

Arg Arg Pro Trp Ala Gly Ser Gln Glu Ala Glu Leu Ser Arg Glu Gly
 885 890 895

Pro Tyr Gly Arg Glu Ser Asp His His Ala Arg Glu Gly Ser Leu Glu
 900 905 910

Gln Pro Gly Phe Trp Glu Gly Glu Ala Glu Arg Gly Lys Ala Gly Asp
 915 920 925

Pro His Arg Arg His Val His Arg Gln Gly Gly Ser Arg Glu Ser Arg
 930 935 940

Ser Gly Ser Pro Arg Thr Gly Ala Asp Gly Glu His Arg Arg His Arg
 945 950 955 960

Ala His Arg Arg Pro Gly Glu Glu Gly Pro Glu Asp Lys Ala Glu Arg
 965 970 975

Arg Ala Arg His Arg Glu Gly Ser Arg Pro Ala Arg Gly Gly Glu Gly
 980 985 990

Glu Gly Glu Gly Pro Asp Gly Gly Glu Arg Arg Arg Arg His Arg His
 995 1000 1005

Gly Ala Pro Ala Thr Tyr Glu Gly Asp Ala Arg Arg Glu Asp Lys
 1010 1015 1020

Glu Arg Arg His Arg Arg Arg Lys Glu Asn Gln Gly Ser Gly Val
 1025 1030 1035

Pro Val Ser Gly Pro Asn Leu Ser Thr Thr Arg Pro Ile Gln Gln
 1040 1045 1050

Asp Leu Gly Arg Gln Asp Pro Pro Leu Ala Glu Asp Ile Asp Asn
 1055 1060 1065

Met Lys Asn Asn Lys Leu Ala Thr Ala Glu Ser Ala Ala Pro His
 1070 1075 1080

Gly Ser Leu Gly His Ala Gly Leu Pro Gln Ser Pro Ala Lys Met
 1085 1090 1095

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Gly	Asn	Ser	Thr	Asp	Pro	Gly	Pro	Met	Leu	Ala	Ile	Pro	Ala	Met
1100						1105					1110			
Ala	Thr	Asn	Pro	Gln	Asn	Ala	Ala	Ser	Arg	Arg	Thr	Pro	Asn	Asn
1115						1120					1125			
Pro	Gly	Asn	Pro	Ser	Asn	Pro	Gly	Pro	Pro	Lys	Thr	Pro	Glu	Asn
1130						1135					1140			
Ser	Leu	Ile	Val	Thr	Asn	Pro	Ser	Gly	Thr	Gln	Thr	Asn	Ser	Ala
1145						1150					1155			
Lys	Thr	Ala	Arg	Lys	Pro	Asp	His	Thr	Thr	Val	Asp	Ile	Pro	Pro
1160						1165					1170			
Ala	Cys	Pro	Pro	Pro	Leu	Asn	His	Thr	Val	Val	Gln	Val	Asn	Lys
1175						1180					1185			
Asn	Ala	Asn	Pro	Asp	Pro	Leu	Pro	Lys	Lys	Glu	Glu	Glu	Lys	Lys
1190						1195					1200			
Glu	Glu	Glu	Glu	Asp	Asp	Arg	Gly	Glu	Asp	Gly	Pro	Lys	Pro	Met
1205						1210					1215			
Pro	Pro	Tyr	Ser	Ser	Met	Phe	Ile	Leu	Ser	Thr	Thr	Asn	Pro	Leu
1220						1225					1230			
Arg	Arg	Leu	Cys	His	Tyr	Ile	Leu	Asn	Leu	Arg	Tyr	Phe	Glu	Met
1235						1240					1245			
Cys	Ile	Leu	Met	Val	Ile	Ala	Met	Ser	Ser	Ile	Ala	Leu	Ala	Ala
1250						1255					1260			
Glu	Asp	Pro	Val	Gln	Pro	Asn	Ala	Pro	Arg	Asn	Asn	Val	Leu	Arg
1265						1270					1275			
Tyr	Phe	Asp	Tyr	Val	Phe	Thr	Gly	Val	Phe	Thr	Phe	Glu	Met	Val
1280						1285					1290			
Ile	Lys	Met	Ile	Asp	Leu	Gly	Leu	Val	Leu	His	Gln	Gly	Ala	Tyr
1295						1300					1305			
Phe	Arg	Asp	Leu	Trp	Asn	Ile	Leu	Asp	Phe	Ile	Val	Val	Ser	Gly
1310						1315					1320			
Ala	Leu	Val	Ala	Phe	Ala	Phe	Thr	Gly	Asn	Ser	Lys	Gly	Lys	Asp
1325						1330					1335			

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Ile	Asn	Thr	Ile	Lys	Ser	Leu	Arg	Val	Leu	Arg	Val	Leu	Arg	Pro
	1340					1345					1350			
Leu	Lys	Thr	Ile	Lys	Arg	Leu	Pro	Lys	Leu	Lys	Ala	Val	Phe	Asp
	1355					1360					1365			
Cys	Val	Val	Asn	Ser	Leu	Lys	Asn	Val	Phe	Asn	Ile	Leu	Ile	Val
	1370					1375					1380			
Tyr	Met	Leu	Phe	Met	Phe	Ile	Phe	Ala	Val	Val	Ala	Val	Gln	Leu
	1385					1390					1395			
Phe	Lys	Gly	Lys	Phe	Phe	His	Cys	Thr	Asp	Glu	Ser	Lys	Glu	Phe
	1400					1405					1410			
Glu	Lys	Asp	Cys	Arg	Gly	Lys	Tyr	Leu	Leu	Tyr	Glu	Lys	Asn	Glu
	1415					1420					1425			
Val	Lys	Ala	Arg	Asp	Arg	Glu	Trp	Lys	Lys	Tyr	Glu	Phe	His	Tyr
	1430					1435					1440			
Asp	Asn	Val	Leu	Trp	Ala	Leu	Leu	Thr	Leu	Phe	Thr	Val	Ser	Thr
	1445					1450					1455			
Gly	Glu	Gly	Trp	Pro	Gln	Val	Leu	Lys	His	Ser	Val	Asp	Ala	Thr
	1460					1465					1470			
Phe	Glu	Asn	Gln	Gly	Pro	Ser	Pro	Gly	Tyr	Arg	Met	Glu	Met	Ser
	1475					1480					1485			
Ile	Phe	Tyr	Val	Val	Tyr	Phe	Val	Val	Phe	Pro	Phe	Phe	Phe	Val
	1490					1495					1500			
Asn	Ile	Phe	Val	Ala	Leu	Ile	Ile	Ile	Thr	Phe	Gln	Glu	Gln	Gly
	1505					1510					1515			
Asp	Lys	Met	Met	Glu	Glu	Tyr	Ser	Leu	Glu	Lys	Asn	Glu	Arg	Ala
	1520					1525					1530			
Cys	Ile	Asp	Phe	Ala	Ile	Ser	Ala	Lys	Pro	Leu	Thr	Arg	His	Met
	1535					1540					1545			
Pro	Gln	Asn	Lys	Gln	Ser	Phe	Gln	Tyr	Arg	Met	Trp	Gln	Phe	Val
	1550					1555					1560			
Val	Ser	Pro	Pro	Phe	Glu	Tyr	Thr	Ile	Met	Ala	Met	Ile	Ala	Leu

1565

1570

Asn Thr Ile Val Leu Met Met Lys Phe Tyr Gly Ala Ser Val Ala
1580 1585 1590

Tyr Glu Asn Ala Leu Arg Val Phe Asn Ile Val Phe Thr Ser Leu
1595 1600 1605

Phe Ser Leu Glu Cys Val Leu Lys Val Met Ala Phe Gly Ile Leu
1610 1615 1620

Asn Tyr Phe Arg Asp Ala Trp Asn Ile Phe Asp Phe Val Thr Val
1625 1630 1635

Leu Gly Ser Ile Thr Asp Ile Leu Val Thr Glu Phe Gly Asn Asn
1640 1645 1650

Phe Ile Asn Leu Ser Phe Leu Arg Leu Phe Arg Ala Ala Arg Leu
1655 1660 1665

Ile Lys Leu Leu Arg Gln Gly Tyr Thr Ile Arg Ile Leu Leu Trp
1670 1675 1680

Thr Phe Val Gln Ser Phe Lys Ala Leu Pro Tyr Val Cys Leu Leu
1685 1690 1695

Ile Ala Met Leu Phe Phe Ile Tyr Ala Ile Ile Gly Met Gln Val
1700 1705 1710

Phe Gly Asn Ile Gly Ile Asp Val Glu Asp Glu Asp Ser Asp Glu
1715 1720 1725

Asp Glu Phe Gln Ile Thr Glu His Asn Asn Phe Arg Thr Phe Phe
1730 1735 1740

Gln Ala Leu Met Leu Leu Phe Arg Ser Ala Thr Gly Glu Ala Trp
1745 1750 1755

His Asn Ile Met Leu Ser Cys Leu Ser Gly Lys Pro Cys Asp Lys
1760 1765 1770

Asn Ser Gly Ile Leu Thr Arg Glu Cys Gly Asn Glu Phe Ala Tyr
1775 1780 1785

Phe Tyr Phe Val Ser Phe Ile Phe Leu Cys Ser Phe Leu Met Leu
1790 1795 1800

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Asn	Leu	Phe	Val	Ala	Val	Ile	Met	Asp	Asn	Phe	Glu	Tyr	Leu	Thr
1805						1810					1815			
Arg	Asp	Ser	Ser	Ile	Leu	Gly	Pro	His	His	Leu	Asp	Glu	Tyr	Val
1820						1825					1830			
Arg	Val	Trp	Ala	Glu	Tyr	Asp	Pro	Ala	Ala	Cys	Gly	Arg	Ile	His
1835						1840					1845			
Tyr	Lys	Asp	Met	Tyr	Ser	Leu	Leu	Arg	Val	Ile	Ser	Pro	Pro	Leu
1850						1855					1860			
Gly	Leu	Gly	Lys	Lys	Cys	Pro	His	Arg	Val	Ala	Cys	Lys	Arg	Leu
1865						1870					1875			
Leu	Arg	Met	Asp	Leu	Pro	Val	Ala	Asp	Asp	Asn	Thr	Val	His	Phe
1880						1885					1890			
Asn	Ser	Thr	Leu	Met	Ala	Leu	Ile	Arg	Thr	Ala	Leu	Asp	Ile	Lys
1895						1900					1905			
Ile	Ala	Lys	Gly	Gly	Ala	Asp	Lys	Gln	Gln	Met	Asp	Ala	Glu	Leu
1910						1915					1920			
Arg	Lys	Glu	Met	Met	Ala	Ile	Trp	Pro	Asn	Leu	Ser	Gln	Lys	Thr
1925						1930					1935			
Leu	Asp	Leu	Leu	Val	Thr	Pro	His	Lys	Ser	Thr	Asp	Leu	Thr	Val
1940						1945					1950			
Gly	Lys	Ile	Tyr	Ala	Ala	Met	Met	Ile	Met	Glu	Tyr	Tyr	Arg	Gln
1955						1960					1965			
Ser	Lys	Ala	Lys	Lys	Leu	Gln	Ala	Met	Arg	Glu	Glu	Gln	Asp	Arg
1970						1975					1980			
Thr	Pro	Leu	Met	Phe	Gln	Arg	Met	Glu	Pro	Pro	Ser	Pro	Thr	Gln
1985						1990					1995			
Glu	Gly	Gly	Pro	Gly	Gln	Asn	Ala	Leu	Pro	Ser	Thr	Gln	Leu	Asp
2000						2005					2010			
Pro	Gly	Gly	Ala	Leu	Met	Ala	His	Glu	Ser	Gly	Leu	Lys	Glu	Ser
2015						2020					2025			
Pro	Ser	Trp	Val	Thr	Gln	Arg	Ala	Gln	Glu	Met	Phe	Gln	Lys	Thr
2030						2035					2040			

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Gly	Thr	Trp	Ser	Pro	Glu	Gln	Gly	Pro	Pro	Thr	Asp	Met	Pro	Asn
2045						2050					2055			
Ser	Gln	Pro	Asn	Ser	Gln	Ser	Val	Glu	Met	Arg	Glu	Met	Gly	Arg
2060						2065					2070			
Asp	Gly	Tyr	Ser	Asp	Ser	Glu	His	Tyr	Leu	Pro	Met	Glu	Gly	Gln
2075						2080					2085			
Gly	Arg	Ala	Ala	Ser	Met	Pro	Arg	Leu	Pro	Ala	Glu	Asn	Gln	Arg
2090						2095					2100			
Arg	Arg	Gly	Arg	Pro	Arg	Gly	Asn	Asn	Leu	Ser	Thr	Ile	Ser	Asp
2105						2110					2115			
Thr	Ser	Pro	Met	Lys	Arg	Ser	Ala	Ser	Val	Leu	Gly	Pro	Lys	Ala
2120						2125					2130			
Arg	Arg	Leu	Asp	Asp	Tyr	Ser	Leu	Glu	Arg	Val	Pro	Pro	Glu	Glu
2135						2140					2145			
Asn	Gln	Arg	His	His	Gln	Arg	Arg	Arg	Asp	Arg	Ser	His	Arg	Ala
2150						2155					2160			
Ser	Glu	Arg	Ser	Leu	Gly	Arg	Tyr	Thr	Asp	Val	Asp	Thr	Gly	Leu
2165						2170					2175			
Gly	Thr	Asp	Leu	Ser	Met	Thr	Thr	Gln	Ser	Gly	Asp	Leu	Pro	Ser
2180						2185					2190			
Lys	Glu	Arg	Asp	Gln	Glu	Arg	Gly	Arg	Pro	Lys	Asp	Arg	Lys	His
2195						2200					2205			
Arg	Gln	His	His	His	His	His	His	His	His	His	His	Pro	Pro	Pro
2210						2215					2220			
Pro	Asp	Lys	Asp	Arg	Tyr	Ala	Gln	Glu	Arg	Pro	Asp	His	Gly	Arg
2225						2230					2235			
Ala	Arg	Ala	Arg	Asp	Gln	Arg	Trp	Ser	Arg	Ser	Pro	Ser	Glu	Gly
2240						2245					2250			
Arg	Glu	His	Met	Ala	His	Arg	Gln	Gly	Ser	Ser	Ser	Val	Ser	Gly
2255						2260					2265			
Ser	Pro	Ala	Pro	Ser	Thr	Ser	Gly	Thr	Ser	Thr	Pro	Arg	Arg	Gly
2270						2275					2280			

Arg Arg Gln Leu Pro Gln Thr Pro Ser Thr Pro Arg Pro His Val
2285 2290 2295

Ser Tyr Ser Pro Val Ile Arg Lys Ala Gly Gly Ser Gly Pro Pro
2300 2305 2310

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Ala Val Ala Arg
2315 2320 2325

Pro Gly Arg Ala Ala Thr Ser Gly Pro Arg Arg Tyr Pro Gly Pro
2330 2335 2340

Thr Ala Glu Pro Leu Ala Gly Asp Arg Pro Pro Thr Gly Gly His
2345 2350 2355

Ser Ser Gly Arg Ser Pro Arg Met Glu Arg Arg Val Pro Gly Pro
2360 2365 2370

Ala Arg Ser Glu Ser Pro Arg Ala Cys Arg His Gly Gly Ala Arg
2375 2380 2385

Trp Pro Ala Ser Gly Pro His Val Ser Glu Gly Pro Pro Gly Pro
2390 2395 2400

Arg His His Gly Tyr Tyr Arg Gly Ser Asp Tyr Asp Glu Ala Asp
2405 2410 2415

Gly Pro Gly Ser Gly Gly Gly Glu Glu Ala Met Ala Gly Ala Tyr
2420 2425 2430

Asp Ala Pro Pro Pro Val Arg His Ala Ser Ser Gly Ala Thr Gly
2435 2440 2445

Arg Ser Pro Arg Thr Pro Arg Ala Ser Gly Pro Ala Cys Ala Ser
2450 2455 2460

Pro Ser Arg His Gly Arg Arg Leu Pro Asn Gly Tyr Tyr Pro Ala
2465 2470 2475

His Gly Leu Ala Arg Pro Arg Gly Pro Gly Ser Arg Lys Gly Leu
2480 2485 2490

His Glu Pro Tyr Ser Glu Ser Asp Asp Asp Trp Cys
2495 2500 2505

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<211> 2312

<212> PRT

<213> Homo sapiens

<400> 12

Met Ala Arg Phe Gly Glu Ala Val Val Ala Arg Pro Gly Ser Gly Asp
1 5 10 15

Gly Asp Ser Asp Gln Ser Arg Asn Arg Gln Gly Thr Pro Val Pro Ala
20 25 30

Ser Gly Gln Ala Ala Ala Tyr Lys Gln Thr Lys Ala Gln Arg Ala Arg
35 40 45

Thr Met Ala Leu Tyr Asn Pro Ile Pro Val Arg Gln Asn Cys Phe Thr
50 55 60

Val Asn Arg Ser Leu Phe Ile Phe Gly Glu Asp Asn Ile Val Arg Lys
65 70 75 80

Tyr Ala Lys Lys Leu Ile Asp Trp Pro Pro Phe Glu Tyr Met Ile Leu
85 90 95

Ala Thr Ile Ile Ala Asn Cys Ile Val Leu Ala Leu Glu Gln His Leu
100 105 110

Pro Glu Asp Asp Lys Thr Pro Met Ser Arg Arg Leu Glu Lys Thr Glu
115 120 125

Pro Tyr Phe Ile Gly Ile Phe Cys Phe Glu Ala Gly Ile Lys Ile Val
130 135 140

Ala Leu Gly Phe Ile Phe His Lys Gly Ser Tyr Leu Arg Asn Gly Trp
145 150 155 160

Asn Val Met Asp Phe Ile Val Val Leu Ser Gly Ile Leu Ala Thr Ala
165 170 175

Gly Thr His Phe Asn Thr His Val Asp Leu Arg Thr Leu Arg Ala Val
180 185 190

Arg Val Leu Arg Pro Leu Lys Leu Val Ser Gly Ile Pro Ser Leu Gln
195 200 205

Ile Val Leu Lys Ser Ile Met Lys Ala Met Val Pro Leu Leu Gln Ile
 210 215 220

Gly Leu Leu Leu Phe Phe Ala Ile Leu Met Phe Ala Ile Ile Gly Leu
 225 230 235 240

Glu Phe Tyr Ser Gly Lys Leu His Arg Ala Cys Phe Met Asn Asn Ser
 245 250 255

Gly Ile Leu Glu Gly Phe Asp Pro Pro His Pro Cys Gly Val Gln Gly
 260 265 270

Cys Pro Ala Gly Tyr Glu Cys Lys Asp Trp Ile Gly Pro Asn Asp Gly
 275 280 285

Ile Thr Gln Phe Asp Asn Ile Leu Phe Ala Val Leu Thr Val Phe Gln
 290 295 300

Cys Ile Thr Met Glu Gly Trp Thr Thr Val Leu Tyr Asn Thr Asn Asp
 305 310 315 320

Ala Leu Gly Ala Thr Trp Asn Trp Leu Tyr Phe Ile Pro Leu Ile Ile
 325 330 335

Ile Gly Ser Phe Phe Val Leu Asn Leu Val Leu Gly Val Leu Ser Gly
 340 345 350

Glu Phe Ala Lys Glu Arg Glu Arg Val Glu Asn Arg Arg Ala Phe Met
 355 360 365

Lys Leu Arg Arg Gln Gln Gln Ile Glu Arg Glu Leu Asn Gly Tyr Arg
 370 375 380

Ala Trp Ile Asp Lys Ala Glu Glu Val Met Leu Ala Glu Glu Asn Lys
 385 390 395 400

Asn Ala Gly Thr Ser Ala Leu Glu Val Leu Arg Arg Ala Thr Ile Lys
 405 410 415

Arg Ser Arg Thr Glu Ala Met Thr Arg Asp Ser Ser Asp Glu His Cys
 420 425 430

Val Asp Ile Ser Ser Val Gly Thr Pro Leu Ala Arg Ala Ser Ile Lys
 435 440 445

Ser Ala Lys Val Asp Gly Val Ser Tyr Phe Arg His Lys Glu Arg Leu
 450 455 460

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Leu Arg Ile Ser Ile Arg His Met Val Lys Ser Gln Val Phe Tyr Trp
 465 470 475 480
 Ile Val Leu Ser Leu Val Ala Leu Asn Thr Ala Cys Val Ala Ile Val
 485 490 495
 His His Asn Gln Pro Gln Trp Leu Thr His Leu Leu Tyr Tyr Ala Glu
 500 505 510
 Phe Leu Phe Leu Gly Leu Phe Leu Leu Glu Met Ser Leu Lys Met Tyr
 515 520 525
 Gly Met Gly Pro Arg Leu Tyr Phe His Ser Ser Phe Asn Cys Phe Asp
 530 535 540
 Phe Gly Val Thr Val Gly Ser Ile Phe Glu Val Val Trp Ala Ile Phe
 545 550 555 560
 Arg Pro Gly Thr Ser Phe Gly Ile Ser Val Leu Arg Ala Leu Arg Leu
 565 570 575
 Leu Arg Ile Phe Lys Ile Thr Lys Tyr Trp Ala Ser Leu Arg Asn Leu
 580 585 590
 Val Val Ser Leu Met Ser Ser Met Lys Ser Ile Ile Ser Leu Leu Phe
 595 600 605
 Leu Leu Phe Leu Phe Ile Val Val Phe Ala Leu Leu Gly Met Gln Leu
 610 615 620
 Phe Gly Gly Arg Phe Asn Phe Asn Asp Gly Thr Pro Ser Ala Asn Phe
 625 630 635 640
 Asp Thr Phe Pro Ala Ala Ile Ile Thr Val Phe Gln Ile Leu Thr Gly
 645 650 655
 Glu Asp Trp Asn Glu Val Met Tyr Asn Gly Ile Arg Ser Gln Gly Gly
 660 665 670
 Val Ser Ser Gly Met Trp Ser Ala Ile Tyr Phe Ile Val Leu Thr Leu
 675 680 685
 Phe Gly Asn Tyr Thr Leu Leu Asn Val Phe Leu Ala Ile Ala Val Asp
 690 695 700
 Asn Leu Ala Asn Ala Gln Glu Leu Thr Lys Asp Glu Gln Glu Glu Glu
 705 710 715 720

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Glu Ala Phe Asn Gln Lys His Ala Leu Gln Lys Ala Lys Glu Val Ser
725 730 735

Pro Met Ser Ala Pro Asn Met Pro Ser Ile Glu Arg Asp Arg Arg Arg
740 745 750

Arg His His Met Ser Met Trp Glu Pro Arg Ser Ser His Leu Arg Glu
755 760 765

Arg Arg Arg Arg His His Met Ser Val Trp Glu Gln Arg Thr Ser Gln
770 775 780

Leu Arg Lys His Met Gln Met Ser Ser Gln Glu Ala Leu Asn Arg Glu
785 790 795 800

Glu Ala Pro Thr Met Asn Pro Leu Asn Pro Leu Asn Pro Leu Ser Ser
805 810 815

Leu Asn Pro Leu Asn Ala His Pro Ser Leu Tyr Arg Arg Pro Arg Ala
820 825 830

Ile Glu Gly Trp Pro Gly Leu Ala Leu Glu Lys Phe Glu Glu Glu Arg
835 840 845

Ile Ser Arg Gly Gly Ser Leu Lys Gly Asp Gly Gly Asp Arg Ser Ser
850 855 860

Ala Leu Asp Asn Gln Arg Thr Pro Leu Ser Leu Gly Gln Arg Glu Pro
865 870 875 880

Pro Trp Leu Ala Arg Pro Cys His Gly Asn Cys Asp Pro Thr Gln Gln
885 890 895

Glu Ala Gly Gly Gly Glu Ala Val Val Thr Phe Glu Asp Arg Ala Arg
900 905 910

His Arg Gln Ser Gln Arg Arg Ser Arg His Arg Arg Val Arg Thr Glu
915 920 925

Gly Lys Glu Ser Ser Ser Ala Ser Arg Ser Arg Ser Ala Ser Gln Glu
930 935 940

Arg Ser Leu Asp Glu Ala Met Pro Thr Glu Gly Glu Lys Asp His Glu
945 950 955 960

Leu Arg Gly Asn His Gly Ala Lys Glu Pro Thr Ile Gln Glu Glu Arg

Ala Gln Asp Leu Arg Arg Thr Asn Ser Leu Met Val Ser Arg Gly Ser
980 985 990

Gly Leu Ala Gly Gly Leu Asp Glu Ala Asp Thr Pro Leu Val Leu Pro
995 1000 1005

His Pro Glu Leu Glu Val Gly Lys His Val Val Leu Thr Glu Gln
1010 1015 1020

Glu Pro Glu Gly Ser Ser Glu Gln Ala Leu Leu Gly Asn Val Gln
1025 1030 1035

Leu Asp Met Gly Arg Val Ile Ser Gln Ser Glu Pro Asp Leu Ser
1040 1045 1050

Cys Ile Thr Ala Asn Thr Asp Lys Ala Thr Thr Glu Ser Thr Ser
1055 1060 1065

Val Thr Val Ala Ile Pro Asp Val Asp Pro Leu Val Asp Ser Thr
1070 1075 1080

Val Val His Ile Ser Asn Lys Thr Asp Gly Glu Ala Ser Pro Leu
1085 1090 1095

Lys Glu Ala Glu Ile Arg Glu Asp Glu Glu Glu Val Glu Lys Lys
1100 1105 1110

Lys Gln Lys Lys Glu Lys Arg Glu Thr Gly Lys Ala Met Val Pro
1115 1120 1125

His Ser Ser Met Phe Ile Phe Ser Thr Thr Asn Pro Ile Arg Arg
1130 1135 1140

Ala Cys His Tyr Ile Val Asn Leu Arg Tyr Phe Glu Met Cys Ile
1145 1150 1155

Leu Leu Val Ile Ala Ala Ser Ser Ile Ala Leu Ala Ala Glu Asp
1160 1165 1170

Pro Val Leu Thr Asn Ser Glu Arg Asn Lys Val Leu Arg Tyr Phe
1175 1180 1185

Asp Tyr Val Phe Thr Gly Val Phe Thr Phe Glu Met Val Ile Lys
1190 1195 1200

Met Ile Asp Gln Gly Leu Ile Leu Gln Asp Gly Ser Tyr Phe Arg
 1205 1210 1215
 Asp Leu Trp Asn Ile Leu Asp Phe Val Val Val Val Gly Ala Leu
 1220 1225 1230
 Val Ala Phe Ala Leu Ala Asn Ala Leu Gly Thr Asn Lys Gly Arg
 1235 1240 1245
 Asp Ile Lys Thr Ile Lys Ser Leu Arg Val Leu Arg Val Leu Arg
 1250 1255 1260
 Pro Leu Lys Thr Ile Lys Arg Leu Pro Lys Leu Lys Ala Val Phe
 1265 1270 1275
 Asp Cys Val Val Thr Ser Leu Lys Asn Val Phe Asn Ile Leu Ile
 1280 1285 1290
 Val Tyr Lys Leu Phe Met Phe Ile Phe Ala Val Ile Ala Val Gln
 1295 1300 1305
 Leu Phe Lys Gly Lys Phe Phe Tyr Cys Thr Asp Ser Ser Lys Asp
 1310 1315 1320
 Thr Glu Lys Glu Cys Ile Gly Asn Tyr Val Asp His Glu Lys Asn
 1325 1330 1335
 Lys Met Glu Val Lys Gly Arg Glu Trp Lys Arg His Glu Phe His
 1340 1345 1350
 Tyr Asp Asn Ile Ile Trp Ala Leu Leu Thr Leu Phe Thr Val Ser
 1355 1360 1365
 Thr Gly Glu Gly Trp Pro Gln Val Leu Gln His Ser Val Asp Val
 1370 1375 1380
 Thr Glu Glu Asp Arg Gly Pro Ser Arg Ser Asn Arg Met Glu Met
 1385 1390 1395
 Ser Ile Phe Tyr Val Val Tyr Phe Val Val Phe Pro Phe Phe Phe
 1400 1405 1410
 Val Asn Ile Phe Val Ala Leu Ile Ile Ile Thr Phe Gln Glu Gln
 1415 1420 1425
 Gly Asp Lys Met Met Glu Glu Cys Ser Leu Glu Lys Asn Glu Arg
 1430 1435 1440

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Ala	Cys	Ile	Asp	Phe	Ala	Ile	Ser	Ala	Lys	Pro	Leu	Thr	Arg	Tyr
1445						1450					1455			
Met	Pro	Gln	Asn	Arg	His	Thr	Phe	Gln	Tyr	Arg	Val	Trp	His	Phe
1460						1465					1470			
Val	Val	Ser	Pro	Ser	Phe	Glu	Tyr	Thr	Ile	Met	Ala	Met	Ile	Ala
1475						1480					1485			
Leu	Asn	Thr	Val	Val	Leu	Met	Met	Lys	Tyr	Tyr	Ser	Ala	Pro	Cys
1490						1495					1500			
Thr	Tyr	Glu	Leu	Ala	Leu	Lys	Tyr	Leu	Asn	Ile	Ala	Phe	Thr	Met
1505						1510					1515			
Val	Phe	Ser	Leu	Glu	Cys	Val	Leu	Lys	Val	Ile	Ala	Phe	Gly	Phe
1520						1525					1530			
Leu	Asn	Tyr	Phe	Arg	Asp	Thr	Trp	Asn	Ile	Phe	Asp	Phe	Ile	Thr
1535						1540					1545			
Val	Ile	Gly	Ser	Ile	Thr	Glu	Ile	Ile	Leu	Thr	Asp	Ser	Lys	Leu
1550						1555					1560			
Val	Asn	Thr	Ser	Gly	Phe	Asn	Met	Ser	Phe	Leu	Lys	Leu	Phe	Arg
1565						1570					1575			
Ala	Ala	Arg	Leu	Ile	Lys	Leu	Leu	Arg	Gln	Gly	Tyr	Thr	Ile	Arg
1580						1585					1590			
Ile	Leu	Leu	Trp	Thr	Phe	Val	Gln	Ser	Phe	Lys	Ala	Leu	Pro	Tyr
1595						1600					1605			
Val	Cys	Leu	Leu	Ile	Ala	Met	Leu	Phe	Phe	Ile	Tyr	Ala	Ile	Ile
1610						1615					1620			
Gly	Met	Gln	Val	Phe	Gly	Asn	Ile	Lys	Leu	Asp	Glu	Glu	Ser	His
1625						1630					1635			
Ile	Asn	Arg	His	Asn	Asn	Phe	Arg	Ser	Phe	Phe	Gly	Ser	Leu	Met
1640						1645					1650			
Leu	Leu	Phe	Arg	Ser	Ala	Thr	Gly	Glu	Ala	Trp	Gln	Glu	Ile	Met
1655						1660					1665			
Leu	Ser	Cys	Leu	Gly	Glu	Lys	Gly	Cys	Glu	Pro	Asp	Thr	Thr	Ala
1670						1675					1680			

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Pro	Ser	Gly	Gln	Asn	Glu	Asn	Glu	Arg	Cys	Gly	Thr	Asp	Leu	Ala
	1685					1690					1695			
Tyr	Val	Tyr	Phe	Val	Ser	Phe	Ile	Phe	Phe	Cys	Ser	Phe	Leu	Met
	1700					1705					1710			
Leu	Asn	Leu	Phe	Val	Ala	Val	Ile	Met	Asp	Asn	Phe	Glu	Tyr	Leu
	1715					1720					1725			
Thr	Arg	Asp	Ser	Ser	Ile	Leu	Gly	Pro	His	His	Leu	Asp	Glu	Phe
	1730					1735					1740			
Val	Arg	Val	Trp	Ala	Glu	Tyr	Asp	Arg	Ala	Ala	Cys	Gly	Arg	Ile
	1745					1750					1755			
His	Tyr	Thr	Glu	Met	Tyr	Glu	Met	Leu	Thr	Leu	Met	Ser	Pro	Pro
	1760					1765					1770			
Leu	Gly	Leu	Gly	Lys	Arg	Cys	Pro	Ser	Lys	Val	Ala	Tyr	Lys	Arg
	1775					1780					1785			
Leu	Val	Leu	Met	Asn	Met	Pro	Val	Ala	Glu	Asp	Met	Thr	Val	His
	1790					1795					1800			
Phe	Thr	Ser	Thr	Leu	Met	Ala	Leu	Ile	Arg	Thr	Ala	Leu	Asp	Ile
	1805					1810					1815			
Lys	Ile	Ala	Lys	Gly	Gly	Ala	Asp	Arg	Gln	Gln	Leu	Asp	Ser	Glu
	1820					1825					1830			
Leu	Gln	Lys	Glu	Thr	Leu	Ala	Ile	Trp	Pro	His	Leu	Ser	Gln	Lys
	1835					1840					1845			
Met	Leu	Asp	Leu	Leu	Val	Pro	Met	Pro	Lys	Ala	Ser	Asp	Leu	Thr
	1850					1855					1860			
Val	Gly	Lys	Ile	Tyr	Ala	Ala	Met	Met	Ile	Met	Asp	Tyr	Tyr	Lys
	1865					1870					1875			
Gln	Ser	Lys	Val	Lys	Lys	Gln	Arg	Gln	Gln	Leu	Glu	Glu	Gln	Lys
	1880					1885					1890			
Asn	Ala	Pro	Met	Phe	Gln	Arg	Met	Glu	Pro	Ser	Ser	Leu	Pro	Gln
	1895					1900					1905			
Glu	Ile	Ile	Ala	Asn	Ala	Lys	Ala	Leu	Pro	Tyr	Leu	Gln	Gln	Asp

1910	1915	
Pro Val 1925	Ser Gly Leu Ser Gly 1930	Arg Ser Gly Tyr Pro 1935 Ser Met Ser
Pro Leu 1940	Ser Pro Gln Asp Ile 1945	Phe Gln Leu Ala Cys 1950 Met Asp Pro
Thr Asp 1955	Asp Gly Gln Phe Gln 1960	Glu Arg Gln Ser Leu 1965 Glu Pro Glu
Val Ser 1970	Glu Leu Lys Ser Val 1975	Gln Pro Ser Asn His 1980 Gly Ile Tyr
Leu Pro 1985	Ser Asp Thr Gln Glu 1990	His Ala Gly Ser Gly 1995 Arg Ala Ser
Ser Met 2000	Pro Arg Leu Thr Val 2005	Asp Pro Gln Val Val 2010 Thr Asp Pro
Ser Ser 2015	Met Arg Arg Ser Phe 2020	Ser Thr Ile Arg Asp 2025 Lys Arg Ser
Asn Ser 2030	Ser Trp Leu Glu Glu 2035	Phe Ser Met Glu Arg 2040 Ser Ser Glu
Asn Thr 2045	Tyr Lys Ser Arg Arg 2050	Arg Ser Tyr His Ser 2055 Ser Leu Arg
Leu Ser 2060	Ala His Arg Leu Asn 2065	Ser Asp Ser Gly His 2070 Lys Ser Asp
Thr His 2075	Arg Ser Gly Gly Arg 2080	Glu Arg Gly Arg Ser 2085 Lys Glu Arg
Lys His 2090	Leu Leu Ser Pro Asp 2095	Val Ser Arg Cys Asn 2100 Ser Glu Glu
Arg Gly 2105	Thr Gln Ala Asp Trp 2110	Glu Ser Pro Glu Arg 2115 Arg Gln Ser
Arg Ser 2120	Pro Ser Glu Gly Arg 2125	Ser Gln Thr Pro Asn 2130 Arg Gln Gly
Thr Gly 2135	Ser Leu Ser Glu Ser 2140	Ser Ile Pro Ser Val 2145 Ser Asp Thr

Ser Thr Pro Arg Arg Ser Arg Arg Gln Leu Pro Pro Val Pro Pro
2150 2155 2160

Lys Pro Arg Pro Leu Leu Ser Tyr Ser Ser Leu Ile Arg His Ala
2165 2170 2175

Gly Ser Ile Ser Pro Pro Ala Asp Gly Ser Glu Glu Gly Ser Pro
2180 2185 2190

Leu Thr Ser Gln Ala Leu Glu Ser Asn Asn Ala Cys Leu Thr Glu
2195 2200 2205

Ser Ser Asn Ser Pro His Pro Gln Gln Ser Gln His Ala Ser Pro
2210 2215 2220

Gln Arg Tyr Ile Ser Glu Pro Tyr Leu Ala Leu His Glu Asp Ser
2225 2230 2235

His Ala Ser Asp Cys Gly Glu Glu Glu Thr Leu Thr Phe Glu Ala
2240 2245 2250

Ala Val Ala Thr Ser Leu Gly Arg Ser Asn Thr Ile Gly Ser Ala
2255 2260 2265

Pro Pro Leu Arg His Ser Trp Gln Met Pro Asn Gly His Tyr Arg
2270 2275 2280

Arg Arg Arg Arg Gly Gly Pro Gly Pro Gly Met Met Cys Gly Ala
2285 2290 2295

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2300 2305 2310

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<211> 2162

<212> PRT

<213> Homo sapiens

<400> 13

Pro Phe Glu Tyr Met Ile Leu Ala Thr Ile Ile Ala Asn Cys Ile Val
1 5 10 15

Leu Ala Leu Glu Gln His Leu Pro Glu Asp Asp Lys Thr Pro Met Ser
20 25 30

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Arg Arg Leu Glu Lys Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe
35 40 45

Glu Ala Gly Ile Lys Ile Val Ala Leu Gly Phe Ile Phe His Lys Gly
50 55 60

Ser Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Ile Val Val Leu
65 70 75 80

Ser Gly Ile Leu Ala Thr Ala Gly Thr His Phe Asn Thr His Val Asp
85 90 95

Leu Arg Thr Leu Arg Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val
100 105 110

Ser Gly Ile Pro Ser Leu Gln Ile Val Leu Lys Ser Ile Met Lys Ala
115 120 125

Met Val Pro Leu Leu Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu
130 135 140

Met Phe Ala Ile Ile Gly Leu Glu Phe Tyr Ser Gly Lys Leu His Arg
145 150 155 160

Ala Cys Phe Met Asn Asn Ser Gly Ile Leu Glu Gly Phe Asp Pro Pro
165 170 175

His Pro Cys Gly Val Gln Gly Cys Pro Ala Gly Tyr Glu Cys Lys Asp
180 185 190

Trp Ile Gly Pro Asn Asp Gly Ile Thr Gln Phe Asp Asn Ile Leu Phe
195 200 205

Ala Val Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Thr
210 215 220

Val Leu Tyr Asn Thr Asn Asp Ala Leu Gly Ala Thr Trp Asn Trp Leu
225 230 235 240

Tyr Phe Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Val Leu Asn Leu
245 250 255

Val Leu Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val
260 265 270

Glu Asn Arg Arg Ala Phe Met Lys Leu Arg Arg Gln Gln Gln Ile Glu
275 280 285

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Arg Glu Leu Asn Gly Tyr Arg Ala Trp Ile Asp Lys Ala Glu Glu Val
290 295 300

Met Leu Ala Glu Glu Asn Lys Asn Ala Gly Thr Ser Ala Leu Glu Val
305 310 315 320

Leu Arg Arg Ala Thr Ile Lys Arg Ser Arg Thr Glu Ala Met Thr Arg
325 330 335

Asp Ser Ser Asp Glu His Cys Val Asp Ile Ser Ser Val Gly Thr Pro
340 345 350

Leu Ala Arg Ala Ser Ile Lys Ser Ala Lys Val Asp Gly Val Ser Tyr
355 360 365

Phe Arg His Lys Glu Arg Leu Leu Arg Ile Ser Ile Arg His Met Val
370 375 380

Lys Ser Gln Val Phe Tyr Trp Ile Val Leu Ser Leu Val Ala Leu Asn
385 390 395 400

Thr Ala Cys Val Ala Ile Val His His Asn Gln Pro Gln Trp Leu Thr
405 410 415

His Leu Leu Tyr Tyr Ala Glu Phe Leu Phe Leu Gly Leu Phe Leu Leu
420 425 430

Glu Met Ser Leu Lys Met Tyr Gly Met Gly Pro Arg Leu Tyr Phe His
435 440 445

Ser Ser Phe Asn Cys Phe Asp Phe Gly Val Thr Val Gly Ser Ile Phe
450 455 460

Glu Val Val Trp Ala Ile Phe Arg Pro Gly Thr Ser Phe Gly Ile Ser
465 470 475 480

Val Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Ile Thr Lys Tyr
485 490 495

Trp Ala Ser Leu Arg Asn Leu Val Val Ser Leu Met Ser Ser Met Lys
500 505 510

Ser Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe
515 520 525

Ala Leu Leu Gly Met Gln Leu Phe Gly Gly Arg Phe Asn Phe Asn Asp
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535

Gly Thr Pro Ser Ala Asn Phe Asp Thr Phe Pro Ala Ala Ile Met Thr
545 550 555 560

Val Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Glu Val Met Tyr Asn
565 570 575

Gly Ile Arg Ser Gln Gly Gly Val Ser Ser Gly Met Trp Ser Ala Ile
580 585 590

Tyr Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val
595 600 605

Phe Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr
610 615 620

Lys Asp Glu Gln Glu Glu Glu Ala Phe Asn Gln Lys His Ala Leu
625 630 635 640

Gln Lys Ala Lys Glu Val Ser Pro Met Ser Ala Pro Asn Met Pro Ser
645 650 655

Ile Glu Arg Glu Arg Arg Arg Arg His His Met Ser Val Trp Glu Gln
660 665 670

Arg Thr Ser Gln Leu Arg Lys His Met Gln Met Ser Ser Gln Glu Ala
675 680 685

Leu Asn Arg Glu Glu Ala Pro Thr Met Asn Pro Leu Asn Pro Leu Asn
690 695 700

Pro Leu Ser Ser Leu Asn Pro Leu Asn Ala His Pro Ser Leu Tyr Arg
705 710 715 720

Arg Pro Arg Ala Ile Glu Gly Leu Ala Leu Gly Leu Ala Leu Glu Lys
725 730 735

Phe Glu Glu Glu Arg Ile Ser Arg Gly Gly Ser Leu Lys Gly Asp Gly
740 745 750

Gly Asp Arg Ser Ser Ala Leu Asp Asn Gln Arg Thr Pro Leu Ser Leu
755 760 765

Gly Gln Arg Glu Pro Pro Trp Leu Ala Arg Pro Cys His Gly Asn Cys
770 775 780

Asp Pro Thr Gln Gln Glu Ala Gly Gly Gly Glu Ala Val Val Thr Phe
 785 790 795 800
 Glu Asp Arg Ala Arg His Arg Gln Ser Gln Arg Arg Ser Arg His Arg
 805 810 815
 Arg Val Arg Thr Glu Gly Lys Glu Ser Ser Ser Ala Ser Arg Ser Arg
 820 825 830
 Ser Ala Ser Gln Glu Arg Ser Leu Asp Glu Ala Met Pro Thr Glu Gly
 835 840 845
 Glu Lys Asp His Glu Leu Arg Gly Asn His Gly Ala Lys Glu Pro Thr
 850 855 860
 Ile Gln Glu Glu Arg Ala Gln Asp Leu Arg Arg Thr Asn Ser Leu Met
 865 870 875 880
 Val Ser Arg Gly Ser Gly Leu Ala Gly Gly Leu Asp Glu Ala Asp Thr
 885 890 895
 Pro Leu Val Leu Pro His Pro Glu Leu Glu Val Gly Lys His Val Val
 900 905 910
 Leu Thr Glu Gln Glu Pro Glu Gly Ser Ser Glu Gln Ala Leu Leu Gly
 915 920 925
 Asn Val Gln Leu Asp Met Gly Arg Val Ile Ser Gln Ser Glu Pro Asp
 930 935 940
 Leu Ser Cys Ile Thr Ala Asn Thr Asp Lys Ala Thr Thr Glu Ser Thr
 945 950 955 960
 Ser Val Thr Val Ala Ile Pro Asp Val Asp Pro Leu Val Asp Ser Thr
 965 970 975
 Val Val His Ile Ser Asn Lys Thr Asp Gly Glu Ala Ser Pro Leu Lys
 980 985 990
 Glu Ala Glu Ile Arg Glu Asp Glu Glu Glu Val Glu Lys Lys Lys Gln
 995 1000 1005
 Lys Lys Glu Lys Arg Glu Thr Gly Lys Ala Met Val Pro His Ser
 1010 1015 1020
 Ser Met Phe Ile Phe Ser Thr Thr Asn Pro Ile Arg Arg Ala Cys
 1025 1030 1035

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His Tyr Ile Val Asn Leu Arg Tyr Phe Glu Met Cys Ile Leu Leu
1040 1045 1050

Val Ile Ala Ala Ser Ser Ile Ala Leu Ala Ala Glu Asp Pro Val
1055 1060 1065

Leu Thr Asn Ser Glu Arg Asn Lys Val Leu Arg Tyr Phe Asp Tyr
1070 1075 1080

Val Phe Thr Gly Val Phe Thr Phe Glu Met Val Ile Lys Met Ile
1085 1090 1095

Asp Gln Gly Leu Ile Leu Gln Asp Gly Ser Tyr Phe Arg Asp Leu
1100 1105 1110

Trp Asn Ile Leu Asp Phe Val Val Val Val Gly Ala Leu Val Ala
1115 1120 1125

Phe Ala Leu Ala Asn Ala Leu Gly Thr Asn Lys Gly Arg Asp Ile
1130 1135 1140

Lys Thr Ile Lys Ser Leu Arg Val Leu Arg Val Leu Arg Pro Leu
1145 1150 1155

Lys Thr Ile Lys Arg Leu Pro Lys Leu Lys Ala Val Phe Asp Cys
1160 1165 1170

Val Val Thr Ser Leu Lys Asn Val Phe Asn Ile Leu Ile Val Tyr
1175 1180 1185

Lys Leu Phe Met Phe Ile Phe Ala Val Ile Ala Val Gln Leu Phe
1190 1195 1200

Lys Gly Lys Phe Phe Tyr Cys Thr Asp Ser Ser Lys Asp Thr Glu
1205 1210 1215

Lys Glu Cys Ile Gly Asn Tyr Val Asp His Glu Lys Asn Lys Met
1220 1225 1230

Glu Val Lys Gly Arg Glu Trp Lys Arg His Glu Phe His Tyr Asp
1235 1240 1245

Asn Ile Ile Trp Ala Leu Leu Thr Leu Phe Thr Val Ser Thr Gly
1250 1255 1260

Glu Gly Trp Pro Gln Val Leu Gln His Ser Val Asp Val Thr Glu
1265 1270 1275

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Glu	Asp	Arg	Gly	Pro	Ser	Arg	Ser	Asn	Arg	Met	Glu	Met	Ser	Ile
	1280					1285					1290			
Phe	Tyr	Val	Val	Tyr	Phe	Val	Val	Phe	Pro	Phe	Phe	Val	Asn	
	1295					1300					1305			
Ile	Phe	Val	Ala	Leu	Ile	Ile	Ile	Thr	Phe	Gln	Glu	Gln	Gly	Asp
	1310					1315					1320			
Lys	Met	Met	Glu	Glu	Cys	Ser	Leu	Glu	Lys	Asn	Glu	Arg	Ala	Cys
	1325					1330					1335			
Ile	Asp	Phe	Ala	Ile	Ser	Ala	Lys	Pro	Leu	Thr	Arg	Tyr	Met	Pro
	1340					1345					1350			
Gln	Asn	Arg	His	Thr	Phe	Gln	Tyr	Arg	Val	Trp	His	Phe	Val	Val
	1355					1360					1365			
Ser	Pro	Ser	Phe	Glu	Tyr	Thr	Ile	Met	Ala	Met	Ile	Ala	Leu	Asn
	1370					1375					1380			
Thr	Val	Val	Leu	Met	Met	Lys	Tyr	Tyr	Ser	Ala	Pro	Cys	Thr	Tyr
	1385					1390					1395			
Glu	Leu	Ala	Leu	Lys	Tyr	Leu	Asn	Ile	Ala	Phe	Thr	Met	Val	Phe
	1400					1405					1410			
Ser	Leu	Glu	Cys	Val	Leu	Lys	Val	Ile	Ala	Phe	Gly	Phe	Leu	Asn
	1415					1420					1425			
Tyr	Phe	Arg	Asp	Thr	Trp	Asn	Ile	Phe	Asp	Phe	Ile	Thr	Val	Ile
	1430					1435					1440			
Gly	Ser	Ile	Thr	Glu	Ile	Ile	Leu	Thr	Asp	Ser	Lys	Leu	Val	Asn
	1445					1450					1455			
Thr	Ser	Gly	Phe	Asn	Met	Ser	Phe	Leu	Lys	Leu	Phe	Arg	Ala	Ala
	1460					1465					1470			
Arg	Leu	Ile	Lys	Leu	Leu	Arg	Gln	Gly	Tyr	Thr	Ile	Arg	Ile	Leu
	1475					1480					1485			
Leu	Trp	Thr	Phe	Val	Gln	Ser	Phe	Lys	Ala	Leu	Pro	Tyr	Val	Cys
	1490					1495					1500			
Leu	Leu	Ile	Ala	Met	Leu	Phe	Phe	Ile	Tyr	Ala	Ile	Ile	Gly	Met

1505		1510	
Gln Val Phe Gly Asn Ile Lys Leu Asp Glu Glu Ser His Ile Asn	1520	1525	1530
Arg His Asn Asn Phe Arg Ser Phe Phe Gly Ser Leu Met Leu Leu	1535	1540	1545
Phe Arg Ser Ala Thr Gly Glu Ala Trp Gln Glu Ile Met Leu Ser	1550	1555	1560
Cys Leu Gly Glu Lys Gly Cys Glu Pro Asp Thr Thr Ala Pro Ser	1565	1570	1575
Gly Gln Asn Glu Asn Glu Arg Cys Gly Thr Asp Leu Ala Tyr Val	1580	1585	1590
Tyr Phe Val Ser Phe Ile Phe Phe Cys Ser Phe Leu Met Leu Asn	1595	1600	1605
Leu Phe Val Ala Val Ile Met Asp Asn Phe Glu Tyr Leu Thr Arg	1610	1615	1620
Asp Ser Ser Ile Leu Gly Pro His His Leu Asp Glu Phe Val Arg	1625	1630	1635
Val Trp Ala Glu Tyr Asp Arg Ala Ala Cys Gly Arg Ile Pro Tyr	1640	1645	1650
Lys Asp Met Tyr Lys Leu Val Arg Val Ile Ser Pro Pro Leu Gly	1655	1660	1665
Leu Gly Glu Asn Cys Pro Tyr Arg Val Ala Cys Lys Arg Leu Val	1670	1675	1680
Leu Met Asn Met Pro Val Ala Glu Asp Met Thr Val His Phe Thr	1685	1690	1695
Ser Thr Leu Met Ala Leu Ile Arg Thr Ala Leu Asp Ile Lys Ile	1700	1705	1710
Ala Lys Gly Gly Ala Asp Arg Gln Gln Leu Asp Ser Glu Leu Gln	1715	1720	1725
Lys Glu Thr Leu Ala Ile Trp Pro His Leu Ser Gln Lys Met Leu	1730	1735	1740

Asp Leu 1745 Leu Val Pro Met Pro 1750 Lys Ala Ser Asp Leu 1755 Thr Val Gly
 Lys Ile 1760 Tyr Ala Ala Met Met 1765 Ile Met Asp Tyr Tyr 1770 Lys Gln Ser
 Lys Val 1775 Lys Lys Gln Arg Gln 1780 Gln Leu Glu Glu Gln 1785 Lys Asn Ala
 Pro Met 1790 Phe Gln Arg Met Glu 1795 Pro Ser Ser Leu Pro 1800 Gln Glu Ile
 Ile Ala 1805 Asn Ala Lys Ala Leu 1810 Pro Tyr Leu Gln Gln 1815 Asp Pro Val
 Ser Gly 1820 Leu Ser Gly Arg Ser 1825 Gly Tyr Pro Ser Met 1830 Ser Pro Leu
 Ser Pro 1835 Gln Asp Ile Phe Gln 1840 Leu Ala Cys Met Asp 1845 Pro Ala Asp
 Asp Gly 1850 Gln Phe Gln Glu Arg 1855 Gln Ser Leu Val Val 1860 Thr Asp Pro
 Ser Ser 1865 Met Arg Arg Ser Phe 1870 Ser Thr Ile Arg Asp 1875 Lys Arg Ser
 Asn Ser 1880 Ser Trp Leu Glu Glu 1885 Phe Ser Met Glu Arg 1890 Ser Ser Glu
 Asn Thr 1895 Tyr Lys Ser Arg Arg 1900 Arg Ser Tyr His Ser 1905 Ser Leu Arg
 Leu Ser 1910 Ala His Arg Leu Asn 1915 Ser Asp Ser Gly His 1920 Lys Ser Asp
 Thr His 1925 Arg Ser Gly Gly Arg 1930 Glu Arg Gly Arg Ser 1935 Lys Glu Arg
 Lys His 1940 Leu Leu Ser Pro Asp 1945 Val Ser Arg Cys Asn 1950 Ser Glu Glu
 Arg Gly 1955 Thr Gln Ala Asp Trp 1960 Glu Ser Pro Glu Arg 1965 Arg Gln Ser
 Arg Ser 1970 Pro Ser Glu Gly Arg 1975 Ser Gln Thr Pro Asn 1980 Arg Gln Gly

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Thr Gly Ser Leu Ser Glu Ser Ser Ile Pro Ser Val Ser Asp Thr
 1985 1990 1995
 Ser Thr Pro Arg Arg Ser Arg Arg Gln Leu Pro Pro Val Pro Pro
 2000 2005 2010
 Lys Pro Arg Pro Leu Leu Ser Tyr Ser Ser Leu Ile Arg His Ala
 2015 2020 2025
 Gly Ser Ile Ser Pro Pro Ala Asp Gly Ser Glu Glu Gly Ser Pro
 2030 2035 2040
 Leu Thr Ser Gln Ala Leu Glu Ser Asn Asn Ala Cys Leu Thr Glu
 2045 2050 2055
 Ser Ser Asn Ser Pro His Pro Gln Gln Ser Gln His Ala Ser Pro
 2060 2065 2070
 Gln Arg Tyr Ile Ser Glu Pro Tyr Leu Ala Leu His Glu Asp Ser
 2075 2080 2085
 His Ala Ser Asp Cys Gly Glu Glu Glu Thr Leu Thr Phe Glu Ala
 2090 2095 2100
 Ala Val Ala Thr Ser Leu Gly Arg Ser Asn Thr Ile Gly Ser Ala
 2105 2110 2115
 Pro Pro Leu Arg His Ser Trp Gln Met Pro Asn Gly His Tyr Arg
 2120 2125 2130
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<211> 2224

<212> PRT

<213> Homo sapiens

<400> 14

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Leu Ala Leu Glu Gln His Leu Pro Glu Asp Asp Lys Thr Pro Met Ser
20 25 30

Arg Arg Leu Glu Lys Thr Glu Pro Tyr Phe Ile Gly Ile Phe Cys Phe
35 40 45

Glu Ala Gly Ile Lys Ile Val Ala Leu Gly Phe Ile Phe His Lys Gly
50 55 60

Ser Tyr Leu Arg Asn Gly Trp Asn Val Met Asp Phe Ile Val Val Leu
65 70 75 80

Ser Gly Ile Leu Ala Thr Ala Gly Thr His Phe Asn Thr His Val Asp
85 90 95

Leu Arg Thr Leu Arg Ala Val Arg Val Leu Arg Pro Leu Lys Leu Val
100 105 110

Ser Gly Ile Pro Ser Leu Gln Ile Val Leu Lys Ser Ile Met Lys Ala
115 120 125

Met Val Pro Leu Leu Gln Ile Gly Leu Leu Leu Phe Phe Ala Ile Leu
130 135 140

Met Phe Ala Ile Ile Gly Leu Glu Phe Tyr Ser Gly Lys Leu His Arg
145 150 155 160

Ala Cys Phe Met Asn Asn Ser Gly Ile Leu Glu Gly Phe Asp Pro Pro
165 170 175

His Pro Cys Gly Val Gln Gly Cys Pro Ala Gly Tyr Glu Cys Lys Asp
180 185 190

Trp Ile Gly Pro Asn Asp Gly Ile Thr Gln Phe Asp Asn Ile Leu Phe
195 200 205

Ala Val Leu Thr Val Phe Gln Cys Ile Thr Met Glu Gly Trp Thr Thr
210 215 220

Val Leu Tyr Asn Thr Asn Asp Ala Leu Gly Ala Thr Trp Asn Trp Leu
225 230 235 240

Tyr Phe Ile Pro Leu Ile Ile Ile Gly Ser Phe Phe Val Leu Asn Leu
245 250 255

Val Leu Gly Val Leu Ser Gly Glu Phe Ala Lys Glu Arg Glu Arg Val
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270

Glu Asn Arg Arg Ala Phe Met Lys Leu Arg Arg Gln Gln Gln Ile Glu
275 280 285

Arg Glu Leu Asn Gly Tyr Arg Ala Trp Ile Asp Lys Ala Glu Glu Val
290 295 300

Met Leu Ala Glu Glu Asn Lys Asn Ala Gly Thr Ser Ala Leu Glu Val
305 310 315 320

Leu Arg Arg Ala Thr Ile Lys Arg Ser Arg Thr Glu Ala Met Thr Arg
325 330 335

Asp Ser Ser Asp Glu His Cys Val Asp Ile Ser Ser Val Gly Thr Pro
340 345 350

Leu Ala Arg Ala Ser Ile Lys Ser Ala Lys Val Asp Gly Val Ser Tyr
355 360 365

Phe Arg His Lys Glu Arg Leu Leu Arg Ile Ser Ile Arg His Met Val
370 375 380

Lys Ser Gln Val Phe Tyr Trp Ile Val Leu Ser Leu Val Ala Leu Asn
385 390 395 400

Thr Ala Cys Val Ala Ile Val His His Asn Gln Pro Gln Trp Leu Thr
405 410 415

His Leu Leu Tyr Tyr Ala Glu Phe Leu Phe Leu Gly Leu Phe Leu Leu
420 425 430

Glu Met Ser Leu Lys Met Tyr Gly Met Gly Pro Arg Leu Tyr Phe His
435 440 445

Ser Ser Phe Asn Cys Phe Asp Phe Gly Val Thr Val Gly Ser Ile Phe
450 455 460

Glu Val Val Trp Ala Ile Phe Arg Pro Gly Thr Ser Phe Gly Ile Ser
465 470 475 480

Val Leu Arg Ala Leu Arg Leu Leu Arg Ile Phe Lys Ile Thr Lys Tyr
485 490 495

Trp Ala Ser Leu Arg Asn Leu Val Val Ser Leu Met Ser Ser Met Lys
500 505 510

Ser Ile Ile Ser Leu Leu Phe Leu Leu Phe Leu Phe Ile Val Val Phe
 515 520 525

Ala Leu Leu Gly Met Gln Leu Phe Gly Gly Arg Phe Asn Phe Asn Asp
 530 535 540

Gly Thr Pro Ser Ala Asn Phe Asp Thr Phe Pro Ala Ala Ile Met Thr
 545 550 555 560

Val Phe Gln Ile Leu Thr Gly Glu Asp Trp Asn Glu Val Met Tyr Asn
 565 570 575

Gly Ile Arg Ser Gln Gly Gly Val Ser Ser Gly Met Trp Ser Ala Ile
 580 585 590

Tyr Phe Ile Val Leu Thr Leu Phe Gly Asn Tyr Thr Leu Leu Asn Val
 595 600 605

Phe Leu Ala Ile Ala Val Asp Asn Leu Ala Asn Ala Gln Glu Leu Thr
 610 615 620

Lys Asp Glu Gln Glu Glu Glu Glu Ala Phe Asn Gln Lys His Ala Leu
 625 630 635 640

Gln Lys Ala Lys Glu Val Ser Pro Met Ser Ala Pro Asn Met Pro Ser
 645 650 655

Ile Glu Arg Asp Arg Arg Arg Arg His His Met Ser Met Trp Glu Pro
 660 665 670

Arg Ser Ser His Leu Arg Glu Arg Arg Arg Arg His His Met Ser Val
 675 680 685

Trp Glu Gln Arg Thr Ser Gln Leu Arg Lys His Met Gln Met Ser Ser
 690 695 700

Gln Glu Ala Leu Asn Arg Glu Glu Ala Pro Thr Met Asn Pro Leu Asn
 705 710 715 720

Pro Leu Asn Pro Leu Ser Ser Leu Asn Pro Leu Asn Ala His Pro Ser
 725 730 735

Leu Tyr Arg Arg Pro Arg Ala Ile Glu Gly Leu Ala Leu Gly Leu Ala
 740 745 750

Leu Glu Lys Phe Glu Glu Glu Arg Ile Ser Arg Gly Gly Ser Leu Lys
 755 760 765

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Gly Asp Gly Gly Asp Arg Ser Ser Ala Leu Asp Asn Gln Arg Thr Pro
770 775 780

Leu Ser Leu Gly Gln Arg Glu Pro Pro Trp Leu Ala Arg Pro Cys His
785 790 795 800

Gly Asn Cys Asp Pro Thr Gln Gln Glu Ala Gly Gly Gly Glu Ala Val
805 810 815

Val Thr Phe Glu Asp Arg Ala Arg His Arg Gln Ser Gln Arg Arg Ser
820 825 830

Arg His Arg Arg Val Arg Thr Glu Gly Lys Glu Ser Ser Ser Ala Ser
835 840 845

Arg Ser Arg Ser Ala Ser Gln Glu Arg Ser Leu Asp Glu Ala Met Pro
850 855 860

Thr Glu Gly Glu Lys Asp His Glu Leu Arg Gly Asn His Gly Ala Lys
865 870 875 880

Glu Pro Thr Ile Gln Glu Glu Arg Ala Gln Asp Leu Arg Arg Thr Asn
885 890 895

Ser Leu Met Val Ser Arg Gly Ser Gly Leu Ala Gly Gly Leu Asp Glu
900 905 910

Ala Asp Thr Pro Leu Val Leu Pro His Pro Glu Leu Glu Val Gly Lys
915 920 925

His Val Val Leu Thr Glu Gln Glu Pro Glu Gly Ser Ser Glu Gln Ala
930 935 940

Leu Leu Gly Asn Val Gln Leu Asp Met Gly Arg Val Ile Ser Gln Ser
945 950 955 960

Glu Pro Asp Leu Ser Cys Ile Thr Ala Asn Thr Asp Lys Ala Thr Thr
965 970 975

Glu Ser Thr Ser Val Thr Val Ala Ile Pro Asp Val Asp Pro Leu Val
980 985 990

Asp Ser Thr Val Val His Ile Ser Asn Lys Thr Asp Gly Glu Ala Ser
995 1000 1005

Pro Leu Lys Glu Ala Glu Ile Arg Glu Asp Glu Glu Glu Val Glu
1010 1015 1020

pha4262.ST25.txt

Lys	Lys 1025	Lys	Gln	Lys	Lys	Glu 1030	Lys	Arg	Glu	Thr	Gly 1035	Lys	Ala	Met
Val	Pro 1040	His	Ser	Ser	Met	Phe 1045	Ile	Phe	Ser	Thr	Thr 1050	Asn	Pro	Ile
Arg	Arg 1055	Ala	Cys	His	Tyr	Ile 1060	Val	Asn	Leu	Arg	Tyr 1065	Phe	Glu	Met
Cys	Ile 1070	Leu	Leu	Val	Ile	Ala 1075	Ala	Ser	Ser	Ile	Ala 1080	Leu	Ala	Ala
Glu	Asp 1085	Pro	Val	Leu	Thr	Asn 1090	Ser	Glu	Arg	Asn	Lys 1095	Val	Leu	Arg
Tyr	Phe 1100	Asp	Tyr	Val	Phe	Thr 1105	Gly	Val	Phe	Thr	Phe 1110	Glu	Met	Val
Ile	Lys 1115	Met	Ile	Asp	Gln	Gly 1120	Leu	Ile	Leu	Gln	Asp 1125	Gly	Ser	Tyr
Phe	Arg 1130	Asp	Leu	Trp	Asn	Ile 1135	Leu	Asp	Phe	Val	Val 1140	Val	Val	Gly
Ala	Leu 1145	Val	Ala	Phe	Ala	Leu 1150	Ala	Asn	Ala	Leu	Gly 1155	Thr	Asn	Lys
Gly	Arg 1160	Asp	Ile	Lys	Thr	Ile 1165	Lys	Ser	Leu	Arg	Val 1170	Leu	Arg	Val
Leu	Arg 1175	Pro	Leu	Lys	Thr	Ile 1180	Lys	Arg	Leu	Pro	Lys 1185	Leu	Lys	Ala
Val	Phe 1190	Asp	Cys	Val	Val	Thr 1195	Ser	Leu	Lys	Asn	Val 1200	Phe	Asn	Ile
Leu	Ile 1205	Val	Tyr	Lys	Leu	Phe 1210	Met	Phe	Ile	Phe	Ala 1215	Val	Ile	Ala
Val	Gln 1220	Leu	Phe	Lys	Gly	Lys 1225	Phe	Phe	Tyr	Cys	Thr 1230	Asp	Ser	Ser
Lys	Asp 1235	Thr	Glu	Lys	Glu	Cys 1240	Ile	Gly	Asn	Tyr	Val 1245	Asp	His	Glu
Lys	Asn	Lys	Met	Glu	Val	Lys	Gly	Arg	Glu	Trp	Lys	Arg	His	Glu

1260

Lys Leu Val Asn Thr Ser Gly Phe Asn Met Ser Phe Leu Lys Leu
1475 1480 1485

Phe Arg Ala Ala Arg Leu Ile Lys Leu Leu Arg Gln Gly Tyr Thr
 1490 1495 1500
 Ile Arg Ile Leu Leu Trp Thr Phe Val Gln Ser Phe Lys Ala Leu
 1505 1510 1515
 Pro Tyr Val Cys Leu Leu Ile Ala Met Leu Phe Phe Ile Tyr Ala
 1520 1525 1530
 Ile Ile Gly Met Gln Val Phe Gly Asn Ile Lys Leu Asp Glu Glu
 1535 1540 1545
 Ser His Ile Asn Arg His Asn Asn Phe Arg Ser Phe Phe Gly Ser
 1550 1555 1560
 Leu Met Leu Leu Phe Arg Ser Ala Thr Gly Glu Ala Trp Gln Glu
 1565 1570 1575
 Ile Met Leu Ser Cys Leu Gly Glu Lys Gly Cys Glu Pro Asp Thr
 1580 1585 1590
 Thr Ala Pro Ser Gly Gln Asn Glu Asn Glu Arg Cys Gly Thr Asp
 1595 1600 1605
 Leu Ala Tyr Val Tyr Phe Val Ser Phe Ile Phe Phe Cys Ser Phe
 1610 1615 1620
 Leu Met Leu Asn Leu Phe Val Ala Val Ile Met Asp Asn Phe Glu
 1625 1630 1635
 Tyr Leu Thr Arg Asp Ser Ser Ile Leu Gly Pro His His Leu Asp
 1640 1645 1650
 Glu Phe Val Arg Val Trp Ala Glu Tyr Asp Arg Ala Ala Cys Gly
 1655 1660 1665
 Arg Ile His Tyr Thr Glu Met Tyr Glu Met Leu Thr Leu Met Ser
 1670 1675 1680
 Pro Pro Leu Gly Leu Gly Lys Arg Cys Pro Ser Lys Val Ala Tyr
 1685 1690 1695
 Lys Arg Leu Val Leu Met Asn Met Pro Val Ala Glu Asp Met Thr
 1700 1705 1710
 Val His Phe Thr Ser Thr Leu Met Ala Leu Ile Arg Thr Ala Leu
 1715 1720 1725

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Asp Ile Lys Ile Ala Lys Gly Gly Ala Asp Arg Gln Gln Leu Asp
 1730 1735 1740
 Ser Glu Leu Gln Lys Glu Thr Leu Ala Ile Trp Pro His Leu Ser
 1745 1750 1755
 Gln Lys Met Leu Asp Leu Leu Val Pro Met Pro Lys Ala Ser Asp
 1760 1765 1770
 Leu Thr Val Gly Lys Ile Tyr Ala Ala Met Met Ile Met Asp Tyr
 1775 1780 1785
 Tyr Lys Gln Ser Lys Val Lys Lys Gln Arg Gln Gln Leu Glu Glu
 1790 1795 1800
 Gln Lys Asn Ala Pro Met Phe Gln Arg Met Glu Pro Ser Ser Leu
 1805 1810 1815
 Pro Gln Glu Ile Ile Ala Asn Ala Lys Ala Leu Pro Tyr Leu Gln
 1820 1825 1830
 Gln Asp Pro Val Ser Gly Leu Ser Gly Arg Ser Gly Tyr Pro Ser
 1835 1840 1845
 Met Ser Pro Leu Ser Pro Gln Asp Ile Phe Gln Leu Ala Cys Met
 1850 1855 1860
 Asp Pro Ala Asp Asp Gly Gln Phe Gln Glu Arg Gln Ser Leu Glu
 1865 1870 1875
 Pro Glu Val Ser Glu Leu Lys Ser Val Gln Pro Ser Asn His Gly
 1880 1885 1890
 Ile Tyr Leu Pro Ser Asp Thr Gln Glu His Ala Gly Ser Gly Arg
 1895 1900 1905
 Ala Ser Ser Met Pro Arg Leu Thr Val Asp Pro Gln Val Val Thr
 1910 1915 1920
 Asp Pro Ser Ser Met Arg Arg Ser Phe Ser Thr Ile Arg Asp Lys
 1925 1930 1935
 Arg Ser Asn Ser Ser Trp Leu Glu Glu Phe Ser Met Glu Arg Ser
 1940 1945 1950
 Ser Glu Asn Thr Tyr Lys Ser Arg Arg Arg Ser Tyr His Ser Ser
 1955 1960 1965

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Leu Arg 1970 Leu Ser Ala His Arg 1975 Leu Asn Ser Asp Ser 1980 Gly His Lys
 Ser Asp 1985 Thr His Arg Ser Gly 1990 Gly Arg Glu Arg Gly 1995 Arg Ser Lys
 Glu Arg 2000 Lys His Leu Leu Ser 2005 Pro Asp Val Ser Arg 2010 Cys Asn Ser
 Glu Glu 2015 Arg Gly Thr Gln Ala 2020 Asp Trp Glu Ser Pro 2025 Glu Arg Arg
 Gln Ser 2030 Arg Ser Pro Ser Gly 2035 Gly Arg Ser Gln Thr 2040 Pro Asn Arg
 Gln Gly 2045 Thr Gly Ser Leu Ser 2050 Glu Ser Ser Ile Pro 2055 Ser Val Ser
 Asp Thr 2060 Ser Thr Pro Arg Arg 2065 Ser Arg Arg Gln Leu 2070 Pro Pro Val
 Pro Pro 2075 Lys Pro Arg Pro Leu 2080 Leu Ser Tyr Ser Ser 2085 Leu Ile Arg
 His Ala 2090 Gly Ser Ile Ser Pro 2095 Pro Ala Asp Gly Ser 2100 Glu Glu Gly
 Ser Pro 2105 Leu Thr Ser Gln Ala 2110 Leu Glu Ser Asn Asn 2115 Ala Cys Leu
 Thr Glu 2120 Ser Ser Asn Ser Pro 2125 His Pro Gln Gln Ser 2130 Gln His Ala
 Ser Pro 2135 Gln Arg Tyr Ile Ser 2140 Glu Pro Tyr Leu Ala 2145 Leu His Glu
 Asp Ser 2150 His Ala Ser Asp Cys 2155 Gly Glu Glu Glu Thr 2160 Leu Thr Phe
 Glu Ala 2165 Ala Val Ala Thr Ser 2170 Leu Gly Arg Ser Asn 2175 Thr Ile Gly
 Ser Ala 2180 Pro Pro Leu Arg His 2185 Ser Trp Gln Met Pro 2190 Asn Gly His
 Tyr Arg Arg Arg Arg Arg Gly Gly Pro Gly Pro Gly Met Met Cys
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2195

2200

Gly Ala Val Asn Asn Leu Leu Ser Asp Thr Glu Glu Asp Asp Lys
2210 2215 2220

Cys

<210> 15

<211> 2377

<212> PRT

<213> Homo sapiens

<400> 15

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Arg Ser Phe Met Arg Leu Asn Asp Leu Ser Gly Ala Gly Gly Arg Pro
20 25 30

Gly Pro Gly Ser Ala Glu Lys Asp Pro Gly Ser Ala Asp Ser Glu Ala
35 40 45

Glu Gly Leu Pro Tyr Pro Ala Leu Ala Pro Val Val Phe Phe Tyr Leu
50 55 60

Ser Gln Asp Ser Arg Pro Arg Ser Trp Cys Leu Arg Thr Val Cys Asn
65 70 75 80

Pro Trp Phe Glu Arg Ile Ser Met Leu Val Ile Leu Leu Asn Cys Val
85 90 95

Thr Leu Gly Met Phe Arg Pro Cys Glu Asp Ile Ala Cys Asp Ser Gln
100 105 110

Arg Cys Arg Ile Leu Gln Ala Phe Asp Asp Phe Ile Phe Ala Phe Phe
115 120 125

Ala Val Glu Met Val Val Lys Met Val Ala Leu Gly Ile Phe Gly Lys
130 135 140

Lys Cys Tyr Leu Gly Asp Thr Trp Asn Arg Leu Asp Phe Phe Ile Val
145 150 155 160

Ile Ala Gly Met Leu Glu Tyr Ser Leu Asp Leu Gln Asn Val Ser Phe
 165 170 175
 Ser Ala Val Arg Thr Val Arg Val Leu Arg Pro Leu Arg Ala Ile Asn
 180 185 190
 Arg Val Pro Ser Met Arg Ile Leu Val Thr Leu Leu Leu Asp Thr Leu
 195 200 205
 Pro Met Leu Gly Asn Val Leu Leu Leu Cys Phe Phe Val Phe Phe Ile
 210 215 220
 Phe Gly Ile Val Gly Val Gln Leu Trp Ala Gly Leu Leu Arg Asn Arg
 225 230 235 240
 Cys Phe Leu Pro Glu Asn Phe Ser Leu Pro Leu Ser Val Asp Leu Glu
 245 250 255
 Arg Tyr Tyr Gln Thr Glu Asn Glu Asp Glu Ser Pro Phe Ile Cys Ser
 260 265 270
 Gln Pro Arg Glu Asn Gly Met Arg Ser Cys Arg Ser Val Pro Thr Leu
 275 280 285
 Arg Gly Asp Gly Gly Gly Gly Pro Pro Cys Gly Leu Asp Tyr Glu Ala
 290 295 300
 Tyr Asn Ser Ser Ser Asn Thr Thr Cys Val Asn Trp Asn Gln Tyr Tyr
 305 310 315 320
 Thr Asn Cys Ser Ala Gly Glu His Asn Pro Phe Lys Gly Ala Ile Asn
 325 330 335
 Phe Asp Asn Ile Gly Tyr Ala Trp Ile Ala Ile Phe Gln Val Ile Thr
 340 345 350
 Leu Glu Gly Trp Val Asp Ile Met Tyr Phe Val Met Asp Ala His Ser
 355 360 365
 Phe Tyr Asn Phe Ile Tyr Phe Ile Leu Leu Ile Ile Val Gly Ser Phe
 370 375 380
 Phe Met Ile Asn Leu Cys Leu Val Val Ile Ala Thr Gln Phe Ser Glu
 385 390 395 400
 Thr Lys Gln Arg Glu Ser Gln Leu Met Arg Glu Gln Arg Val Arg Phe
 405 410 415

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Leu Ser Asn Ala Ser Thr Leu Ala Ser Phe Ser Glu Pro Gly Ser Cys
420 425 430

Tyr Glu Glu Leu Leu Lys Tyr Leu Val Tyr Ile Leu Arg Lys Ala Ala
435 440 445

Arg Arg Leu Ala Gln Val Ser Arg Ala Ala Gly Val Arg Val Gly Leu
450 455 460

Leu Ser Ser Pro Ala Pro Leu Gly Gly Gln Glu Thr Gln Pro Ser Ser
465 470 475 480

Ser Cys Ser Arg Ser His Arg Arg Leu Ser Val His His Leu Val His
485 490 495

His His His His His His His His Tyr His Leu Gly Asn Gly Thr Leu
500 505 510

Arg Ala Pro Arg Ala Ser Pro Glu Ile Gln Asp Arg Asp Ala Asn Gly
515 520 525

Ser Arg Arg Leu Met Leu Pro Pro Pro Ser Thr Pro Ala Leu Ser Gly
530 535 540

Ala Pro Pro Gly Gly Ala Glu Ser Val His Ser Phe Tyr His Ala Asp
545 550 555 560

Cys His Leu Glu Pro Val Arg Cys Gln Ala Pro Pro Pro Arg Ser Pro
565 570 575

Ser Glu Ala Ser Gly Arg Thr Val Gly Ser Gly Lys Val Tyr Pro Thr
580 585 590

Val His Thr Ser Pro Pro Pro Glu Thr Leu Lys Glu Lys Ala Leu Val
595 600 605

Glu Val Ala Ala Ser Ser Gly Pro Pro Thr Leu Thr Ser Leu Asn Ile
610 615 620

Pro Pro Gly Pro Tyr Ser Ser Met His Lys Leu Leu Glu Thr Gln Ser
625 630 635 640

Thr Gly Ala Cys Gln Ser Ser Cys Lys Ile Ser Ser Pro Cys Leu Lys
645 650 655

Ala Asp Ser Gly Ala Cys Gly Pro Asp Ser Cys Pro Tyr Cys Ala Arg
660 665 670

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Ala Gly Ala Gly Glu Val Glu Leu Ala Asp Arg Glu Met Pro Asp Ser
675 680 685

Asp Ser Glu Ala Val Tyr Glu Phe Thr Gln Asp Ala Gln His Ser Asp
690 695 700

Leu Arg Asp Pro His Ser Arg Arg Gln Arg Ser Leu Gly Pro Asp Ala
705 710 715 720

Glu Pro Ser Ser Val Leu Ala Phe Trp Arg Leu Ile Cys Asp Thr Phe
725 730 735

Arg Lys Ile Val Asp Ser Lys Tyr Phe Gly Arg Gly Ile Met Ile Ala
740 745 750

Ile Leu Val Asn Thr Leu Ser Met Gly Ile Glu Tyr His Glu Gln Pro
755 760 765

Glu Glu Leu Thr Asn Ala Leu Glu Ile Ser Asn Ile Val Phe Thr Ser
770 775 780

Leu Phe Ala Leu Glu Met Leu Leu Lys Leu Leu Val Tyr Gly Pro Phe
785 790 795 800

Gly Tyr Ile Lys Asn Pro Tyr Asn Ile Phe Asp Gly Val Ile Val Val
805 810 815

Ile Ser Val Trp Glu Ile Val Gly Gln Gln Gly Gly Gly Leu Ser Val
820 825 830

Leu Arg Thr Phe Arg Leu Met Arg Val Leu Lys Leu Val Arg Phe Leu
835 840 845

Pro Ala Leu Gln Arg Gln Leu Val Val Leu Met Lys Thr Met Asp Asn
850 855 860

Val Ala Thr Phe Cys Met Leu Leu Met Leu Phe Ile Phe Ile Phe Ser
865 870 875 880

Ile Leu Gly Met His Leu Phe Gly Cys Lys Phe Ala Ser Glu Arg Asp
885 890 895

Gly Asp Thr Leu Pro Asp Arg Lys Asn Phe Asp Ser Leu Leu Trp Ala
900 905 910

915

920

925

Leu Tyr Asn Gly Met Ala Ser Thr Ser Ser Trp Ala Ala Leu Tyr Phe
 930 935 940

Ile Ala Leu Met Thr Phe Gly Asn Tyr Val Leu Phe Asn Leu Leu Val
 945 950 955 960

Ala Ile Leu Val Glu Gly Phe Gln Ala Glu Glu Ile Ser Lys Arg Glu
 965 970 975

Asp Ala Ser Gly Gln Leu Ser Cys Ile Gln Leu Pro Val Asp Ser Gln
 980 985 990

Gly Gly Asp Ala Asn Lys Ser Glu Ser Glu Pro Asp Phe Phe Ser Pro
 995 1000 1005

Ser Leu Asp Gly Asp Gly Asp Arg Lys Lys Cys Leu Ala Leu Val
 1010 1015 1020

Ser Leu Gly Glu His Pro Glu Leu Arg Lys Ser Leu Leu Pro Pro
 1025 1030 1035

Leu Ile Ile His Thr Ala Ala Thr Pro Met Ser Leu Pro Lys Ser
 1040 1045 1050

Thr Ser Thr Gly Leu Gly Glu Ala Leu Gly Pro Ala Ser Arg Arg
 1055 1060 1065

Thr Ser Ser Ser Gly Ser Ala Glu Pro Gly Ala Ala His Glu Met
 1070 1075 1080

Lys Ser Pro Pro Ser Ala Arg Ser Ser Pro His Ser Pro Trp Ser
 1085 1090 1095

Ala Ala Ser Ser Trp Thr Ser Arg Arg Ser Ser Arg Asn Ser Leu
 1100 1105 1110

Gly Arg Ala Pro Ser Leu Lys Arg Arg Ser Pro Ser Gly Glu Arg
 1115 1120 1125

Arg Ser Leu Leu Ser Gly Glu Gly Gln Glu Ser Gln Asp Glu Glu
 1130 1135 1140

Glu Ser Ser Glu Glu Glu Arg Ala Ser Pro Ala Gly Ser Asp His
 1145 1150 1155

Arg His Arg Gly Ser Leu Glu Arg Glu Ala Lys Ser Ser Phe Asp
 1160 1165 1170
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 1175 1180 1185
 Gly Arg Gly Ser Ala Ser Glu His Gln Asp Cys Asn Gly Lys Ser
 1190 1195 1200
 Ala Ser Gly Arg Leu Ala Arg Ala Leu Arg Pro Asp Asp Pro Pro
 1205 1210 1215
 Leu Asp Gly Asp Asp Ala Asp Asp Glu Gly Asn Leu Ser Lys Gly
 1220 1225 1230
 Glu Arg Val Arg Ala Trp Ile Arg Ala Arg Leu Pro Ala Cys Cys
 1235 1240 1245
 Leu Glu Arg Asp Ser Trp Ser Ala Tyr Ile Phe Pro Pro Gln Ser
 1250 1255 1260
 Arg Phe Arg Leu Leu Cys His Arg Ile Ile Thr His Lys Met Phe
 1265 1270 1275
 Asp His Val Val Leu Val Ile Ile Phe Leu Asn Cys Ile Thr Ile
 1280 1285 1290
 Ala Met Glu Arg Pro Lys Ile Asp Pro His Ser Ala Glu Arg Ile
 1295 1300 1305
 Phe Leu Thr Leu Ser Asn Tyr Ile Phe Thr Ala Val Phe Leu Ala
 1310 1315 1320
 Glu Met Thr Val Lys Val Val Ala Leu Gly Trp Cys Phe Gly Glu
 1325 1330 1335
 Gln Ala Tyr Leu Arg Ser Ser Trp Asn Val Leu Asp Gly Leu Leu
 1340 1345 1350
 Val Leu Ile Ser Val Ile Asp Ile Leu Val Ser Met Val Ser Asp
 1355 1360 1365
 Ser Gly Thr Lys Ile Leu Gly Met Leu Arg Val Leu Arg Leu Leu
 1370 1375 1380
 Arg Thr Leu Arg Pro Leu Arg Val Ile Ser Arg Ala Gln Gly Leu
 1385 1390 1395

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Lys Leu Val Val Glu Thr Leu Met Ser Ser Leu Lys Pro Ile Gly
 1400 1405 1410
 Asn Ile Val Val Ile Cys Cys Ala Phe Phe Ile Ile Phe Gly Ile
 1415 1420 1425
 Leu Gly Val Gln Leu Phe Lys Gly Lys Phe Phe Val Cys Gln Gly
 1430 1435 1440
 Glu Asp Thr Arg Asn Ile Thr Asn Lys Ser Asp Cys Ala Glu Ala
 1445 1450 1455
 Ser Tyr Arg Trp Val Arg His Lys Tyr Asn Phe Asp Asn Leu Gly
 1460 1465 1470
 Gln Ala Leu Met Ser Leu Phe Val Leu Ala Ser Lys Asp Gly Trp
 1475 1480 1485
 Val Asp Ile Met Tyr Asp Gly Leu Asp Ala Val Gly Val Asp Gln
 1490 1495 1500
 Gln Pro Ile Met Asn His Asn Pro Trp Met Leu Leu Tyr Phe Ile
 1505 1510 1515
 Ser Phe Leu Leu Ile Val Ala Phe Phe Val Leu Asn Met Phe Val
 1520 1525 1530
 Gly Val Val Val Glu Asn Phe His Lys Cys Arg Gln His Gln Glu
 1535 1540 1545
 Glu Glu Glu Ala Arg Arg Arg Glu Glu Lys Arg Leu Arg Arg Leu
 1550 1555 1560
 Glu Lys Lys Arg Arg Asn Leu Met Leu Asp Asp Val Ile Ala Ser
 1565 1570 1575
 Gly Ser Ser Ala Ser Ala Ala Ser Glu Ala Gln Cys Lys Pro Tyr
 1580 1585 1590
 Tyr Ser Asp Tyr Ser Arg Phe Arg Leu Leu Val His His Leu Cys
 1595 1600 1605
 Thr Ser His Tyr Leu Asp Leu Phe Ile Thr Gly Val Ile Gly Leu
 1610 1615 1620
 Asn Val Val Thr Met Ala Met Glu His Tyr Gln Gln Pro Gln Ile
 1625 1630 1635

pha4262.ST25.txt

Leu	Asp	Glu	Ala	Leu	Lys	Ile	Cys	Asn	Tyr	Ile	Phe	Thr	Val	Ile
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Phe	Val	Leu	Glu	Ser	Val	Phe	Lys	Leu	Val	Ala	Phe	Gly	Phe	Arg
	1655					1660					1665			
Arg	Phe	Phe	Gln	Asp	Arg	Trp	Asn	Gln	Leu	Asp	Leu	Ala	Ile	Val
	1670					1675					1680			
Leu	Leu	Ser	Ile	Met	Gly	Ile	Thr	Leu	Glu	Glu	Ile	Glu	Val	Asn
	1685					1690					1695			
Ala	Ser	Leu	Pro	Ile	Asn	Pro	Thr	Ile	Ile	Arg	Ile	Met	Arg	Val
	1700					1705					1710			
Leu	Arg	Ile	Ala	Arg	Val	Leu	Lys	Leu	Leu	Lys	Met	Ala	Val	Gly
	1715					1720					1725			
Met	Arg	Ala	Leu	Leu	Asp	Thr	Val	Met	Gln	Ala	Leu	Pro	Gln	Val
	1730					1735					1740			
Gly	Asn	Leu	Gly	Leu	Leu	Phe	Met	Leu	Leu	Phe	Phe	Ile	Phe	Ala
	1745					1750					1755			
Ala	Leu	Gly	Val	Glu	Leu	Phe	Gly	Asp	Leu	Glu	Cys	Asp	Glu	Thr
	1760					1765					1770			
His	Pro	Cys	Glu	Gly	Leu	Gly	Arg	His	Ala	Thr	Phe	Arg	Asn	Phe
	1775					1780					1785			
Gly	Met	Ala	Phe	Leu	Thr	Leu	Phe	Arg	Val	Ser	Thr	Gly	Asp	Asn
	1790					1795					1800			
Trp	Asn	Gly	Ile	Met	Lys	Asp	Thr	Leu	Arg	Asp	Cys	Asp	Gln	Glu
	1805					1810					1815			
Ser	Thr	Cys	Tyr	Asn	Thr	Val	Ile	Ser	Pro	Ile	Tyr	Phe	Val	Ser
	1820					1825					1830			
Phe	Val	Leu	Thr	Ala	Gln	Phe	Val	Leu	Val	Asn	Val	Val	Ile	Ala
	1835					1840					1845			
Val	Leu	Met	Lys	His	Leu	Glu	Glu	Ser	Asn	Lys	Glu	Ala	Lys	Glu
	1850					1855					1860			
Glu	Ala	Glu	Leu	Glu	Ala	Glu	Leu	Glu	Leu	Glu	Met	Lys	Thr	Leu

1865	1870										
Ser 1880	Pro 1885	Gln 1890	Pro 1895	His 1900	Ser 1905	Pro 1910	Leu 1915	Gly 1920	Ser 1925	Pro 1930	Phe 1935
Gly 1895	Val 1900	Glu 1905	Gly 1910	Pro 1915	Asp 1920	Ser 1925	Pro 1930	Asp 1935	Ser 1940	Pro 1945	Lys 1950
Leu 1910	His 1915	Pro 1920	Ala 1925	Ala 1930	His 1935	Ala 1940	Arg 1945	Ser 1950	Ala 1955	Ser 1960	His 1965
Glu 1925	His 1930	Pro 1935	Thr 1940	Asp 1945	Arg 1950	Gln 1955	Leu 1960	Phe 1965	Asp 1970	Thr 1975	Ile 1980
Ile 1940	Gln 1945	Gly 1950	Ser 1955	Leu 1960	Glu 1965	Trp 1970	Glu 1975	Leu 1980	Lys 1985	Leu 1990	Met 1995
Ala 1955	Gly 1960	Pro 1965	Gly 1970	Gly 1975	Gln 1980	Pro 1985	Ser 1990	Ala 1995	Phe 2000	Pro 2005	Ser 2010
Leu 1970	Gly 1975	Gly 1980	Ser 1985	Asp 1990	Pro 1995	Gln 2000	Ile 2005	Pro 2010	Leu 2015	Ala 2020	Glu 2025
Leu 1985	Ser 1990	Leu 1995	Thr 2000	Ser 2005	Glu 2010	Ile 2015	Val 2020	Ser 2025	Glu 2030	Pro 2035	Ser 2040
Ala 2000	Leu 2005	Thr 2010	Asp 2015	Asp 2020	Ser 2025	Leu 2030	Pro 2035	Asp 2040	Asp 2045	Met 2050	His 2055
Leu 2015	Ser 2020	Ala 2025	Leu 2030	Glu 2035	Ser 2040	Asn 2045	Met 2050	Gln 2055	Pro 2060	His 2065	Pro 2070
Pro 2030	Gly 2035	Pro 2040	Asp 2045	Leu 2050	Leu 2055	Thr 2060	Val 2065	Arg 2070	Lys 2075	Ser 2080	Gly 2085
Thr 2045	His 2050	Ser 2055	Leu 2060	Pro 2065	Asn 2070	Asp 2075	Ser 2080	Tyr 2085	Met 2090	Cys 2095	Arg 2100
Thr 2060	Ala 2065	Glu 2070	Gly 2075	Pro 2080	Leu 2085	Gly 2090	His 2095	Arg 2100	Gly 2105	Trp 2110	Gly 2115
Ala 2075	Gln 2080	Ser 2085	Gly 2090	Ser 2095	Val 2100	Leu 2105	Ser 2110	Val 2115	His 2120	Ser 2125	Gln 2130
Thr 2090	Ser 2095	Tyr 2100	Ile 2105	Leu 2110	Gln 2115	Leu 2120	Pro 2125	Lys 2130	Asp 2135	Ala 2140	Pro 2145

Gln Pro His Ser Ala Pro Thr Trp Gly Thr Ile Pro Lys Leu Pro
 2105 2110 2115
 Pro Pro Gly Arg Ser Pro Leu Ala Gln Arg Pro Leu Arg Arg Gln
 2120 2125 2130
 Ala Ala Ile Arg Thr Asp Ser Leu Asp Val Gln Gly Leu Gly Ser
 2135 2140 2145
 Arg Glu Asp Leu Leu Ala Glu Val Ser Gly Pro Ser Pro Pro Leu
 2150 2155 2160
 Ala Arg Ala Tyr Ser Phe Trp Gly Gln Ser Ser Thr Gln Ala Gln
 2165 2170 2175
 Gln His Ser Arg Ser His Ser Lys Ile Ser Lys His Met Thr Pro
 2180 2185 2190
 Pro Ala Pro Cys Pro Gly Pro Glu Pro Asn Trp Gly Lys Gly Pro
 2195 2200 2205
 Pro Glu Thr Arg Ser Ser Leu Glu Leu Asp Thr Glu Leu Ser Trp
 2210 2215 2220
 Ile Ser Gly Asp Leu Leu Pro Pro Gly Gly Gln Glu Glu Pro Pro
 2225 2230 2235
 Ser Pro Arg Asp Leu Lys Lys Cys Tyr Ser Val Glu Ala Gln Ser
 2240 2245 2250
 Cys Gln Arg Arg Pro Thr Ser Trp Leu Asp Glu Gln Arg Arg His
 2255 2260 2265
 Ser Ile Ala Val Ser Cys Leu Asp Ser Gly Ser Gln Pro His Leu
 2270 2275 2280
 Gly Thr Asp Pro Ser Asn Leu Gly Gly Gln Pro Leu Gly Gly Pro
 2285 2290 2295
 Gly Ser Arg Pro Lys Lys Lys Leu Ser Pro Pro Ser Ile Thr Ile
 2300 2305 2310
 Asp Pro Pro Glu Ser Gln Gly Pro Arg Thr Pro Pro Ser Pro Gly
 2315 2320 2325
 Ile Cys Leu Arg Arg Arg Ala Pro Ser Ser Asp Ser Lys Asp Pro
 2330 2335 2340

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Leu Ala Ser Gly Pro Pro Asp Ser Met Ala Ala Ser Pro Ser Pro
2345 2350 2355

Lys Lys Asp Val Leu Ser Leu Ser Gly Leu Ser Ser Asp Pro Ala
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Asp Leu Asp Pro
2375

<210> 16

<211> 2250

<212> PRT

<213> Homo sapiens

<400> 16

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Arg Ser Phe Met Arg Leu Asn Asp Leu Ser Gly Ala Gly Gly Arg Pro
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Gly Pro Gly Ser Ala Glu Lys Asp Pro Gly Ser Ala Asp Ser Glu Ala
35 40 45

Glu Gly Leu Pro Tyr Pro Ala Leu Ala Pro Val Val Phe Phe Tyr Leu
50 55 60

Ser Gln Asp Ser Arg Pro Arg Ser Trp Cys Leu Arg Thr Val Cys Asn
65 70 75 80

Pro Trp Phe Glu Arg Ile Ser Met Leu Val Ile Leu Leu Asn Cys Val
85 90 95

Thr Leu Gly Met Phe Arg Pro Cys Glu Asp Ile Ala Cys Asp Ser Gln
100 105 110

Arg Cys Arg Ile Leu Gln Ala Phe Asp Asp Phe Ile Phe Ala Phe Phe
115 120 125

Ala Val Glu Met Val Val Lys Met Val Ala Leu Gly Ile Phe Gly Lys
130 135 140

Lys Cys Tyr Leu Gly Asp Thr Trp Asn Arg Leu Asp Phe Phe Ile Val
145 150 155 160

pha4262.ST25.txt

Ile Ala Gly Met Leu Glu Tyr Ser Leu Asp Leu Gln Asn Val Ser Phe
165 170 175

Ser Ala Val Arg Thr Val Arg Val Leu Arg Pro Leu Arg Ala Ile Asn
180 185 190

Arg Val Pro Ser Met Arg Ile Leu Val Thr Leu Leu Leu Asp Thr Leu
195 200 205

Pro Met Leu Gly Asn Val Leu Leu Leu Cys Phe Phe Val Phe Phe Ile
210 215 220

Phe Gly Ile Val Gly Val Gln Leu Trp Ala Gly Leu Leu Arg Asn Arg
225 230 235 240

Cys Phe Leu Pro Glu Asn Phe Ser Leu Pro Leu Ser Val Asp Leu Glu
245 250 255

Arg Tyr Tyr Gln Thr Glu Asn Glu Asp Glu Ser Pro Phe Ile Cys Ser
260 265 270

Gln Pro Arg Glu Asn Gly Met Arg Ser Cys Arg Ser Val Pro Thr Leu
275 280 285

Arg Gly Asp Gly Gly Gly Gly Pro Pro Cys Gly Leu Asp Tyr Glu Ala
290 295 300

Tyr Asn Ser Ser Ser Asn Thr Thr Cys Val Asn Trp Asn Gln Tyr Tyr
305 310 315 320

Thr Asn Cys Ser Ala Gly Glu His Asn Pro Phe Lys Gly Ala Ile Asn
325 330 335

Phe Asp Asn Ile Gly Tyr Ala Trp Ile Ala Ile Phe Gln Val Ile Thr
340 345 350

Leu Glu Gly Trp Val Asp Ile Met Tyr Phe Val Met Asp Ala His Ser
355 360 365

Phe Tyr Asn Phe Ile Tyr Phe Ile Leu Leu Ile Ile Val Gly Ser Phe
370 375 380

Phe Met Ile Asn Leu Cys Leu Val Val Ile Ala Thr Gln Phe Ser Glu
385 390 395 400

Thr Lys Gln Arg Glu Ser Gln Leu Met Arg Glu Gln Arg Val Arg Phe
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Leu Ser Asn Ala Ser Thr Leu Ala Ser Phe Ser Glu Pro Gly Ser Cys
420 425 430

Tyr Glu Glu Leu Leu Lys Tyr Leu Val Tyr Ile Leu Arg Lys Ala Ala
435 440 445

Arg Arg Leu Ala Gln Val Ser Arg Ala Ala Gly Val Arg Val Gly Leu
450 455 460

Leu Ser Ser Pro Ala Pro Leu Gly Gly Gln Glu Thr Gln Pro Ser Ser
465 470 475 480

Ser Cys Ser Arg Ser His Arg Arg Leu Ser Val His His Leu Val His
485 490 495

His His His His His His His His Tyr His Leu Gly Asn Gly Thr Leu
500 505 510

Arg Ala Pro Arg Ala Ser Pro Glu Ile Gln Asp Arg Asp Ala Asn Gly
515 520 525

Ser Arg Arg Leu Met Leu Pro Pro Pro Ser Thr Pro Ala Leu Ser Gly
530 535 540

Ala Pro Pro Gly Gly Ala Glu Ser Val His Ser Phe Tyr His Ala Asp
545 550 555 560

Cys His Leu Glu Pro Val Arg Cys Gln Ala Pro Pro Pro Arg Ser Pro
565 570 575

Ser Glu Ala Ser Gly Arg Thr Val Gly Ser Gly Lys Val Tyr Pro Thr
580 585 590

Val His Thr Ser Pro Pro Pro Glu Thr Leu Lys Glu Lys Ala Leu Val
595 600 605

Glu Val Ala Ala Ser Ser Gly Pro Pro Thr Leu Thr Ser Leu Asn Ile
610 615 620

Pro Pro Gly Pro Tyr Ser Ser Met His Lys Leu Leu Glu Thr Gln Ser
625 630 635 640

Thr Gly Ala Cys Gln Ser Ser Cys Lys Ile Ser Ser Pro Cys Leu Lys
645 650 655

Ala Asp Ser Gly Ala Cys Gly Pro Asp Ser Cys Pro Tyr Cys Ala Arg
 660 665 670

Ala Gly Ala Gly Glu Val Glu Leu Ala Asp Arg Glu Met Pro Asp Ser
 675 680 685

Asp Ser Glu Ala Val Tyr Glu Phe Thr Gln Asp Ala Gln His Ser Asp
 690 695 700

Leu Arg Asp Pro His Ser Arg Arg Gln Arg Ser Leu Gly Pro Asp Ala
 705 710 715 720

Glu Pro Ser Ser Val Leu Ala Phe Trp Arg Leu Ile Cys Asp Thr Phe
 725 730 735

Arg Lys Ile Val Asp Ser Lys Tyr Phe Gly Arg Gly Ile Met Ile Ala
 740 745 750

Ile Leu Val Asn Thr Leu Ser Met Gly Ile Glu Tyr His Glu Gln Pro
 755 760 765

Glu Glu Leu Thr Asn Ala Leu Glu Ile Ser Asn Ile Val Phe Thr Ser
 770 775 780

Leu Phe Ala Leu Glu Met Leu Leu Lys Leu Leu Val Tyr Gly Pro Phe
 785 790 795 800

Gly Tyr Ile Lys Asn Pro Tyr Asn Ile Phe Asp Gly Val Ile Val Val
 805 810 815

Ile Ser Val Trp Glu Ile Val Gly Gln Gln Gly Gly Gly Leu Ser Val
 820 825 830

Leu Arg Thr Phe Arg Leu Met Arg Val Leu Lys Leu Val Arg Phe Leu
 835 840 845

Pro Ala Leu Gln Arg Gln Leu Val Val Leu Met Lys Thr Met Asp Asn
 850 855 860

Val Ala Thr Phe Cys Met Leu Leu Met Leu Phe Ile Phe Ile Phe Ser
 865 870 875 880

Ile Leu Gly Met His Leu Phe Gly Cys Lys Phe Ala Ser Glu Arg Asp
 885 890 895

Gly Asp Thr Leu Pro Asp Arg Lys Asn Phe Asp Ser Leu Leu Trp Ala
 900 905 910

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Ile Val Thr Val Phe Gln Ile Leu Thr Gln Glu Asp Trp Asn Lys Val
915 920 925

Leu Tyr Asn Gly Met Ala Ser Thr Ser Ser Trp Ala Ala Leu Tyr Phe
930 935 940

Ile Ala Leu Met Thr Phe Gly Asn Tyr Val Leu Phe Asn Leu Leu Val
945 950 955 960

Ala Ile Leu Val Glu Gly Phe Gln Ala Glu Gly Asp Ala Asn Lys Ser
965 970 975

Glu Ser Glu Pro Asp Phe Phe Ser Pro Ser Leu Asp Gly Asp Gly Asp
980 985 990

Arg Lys Lys Cys Leu Ala Leu Val Ser Leu Gly Glu His Pro Glu Leu
995 1000 1005

Arg Lys Ser Leu Leu Pro Pro Leu Ile Ile His Thr Ala Ala Thr
1010 1015 1020

Pro Met Ser Leu Pro Lys Ser Thr Ser Thr Gly Leu Gly Glu Ala
1025 1030 1035

Leu Gly Pro Ala Ser Arg Arg Thr Ser Ser Ser Gly Ser Ala Glu
1040 1045 1050

Pro Gly Ala Ala His Glu Met Lys Ser Pro Pro Ser Ala Arg Ser
1055 1060 1065

Ser Pro His Ser Pro Trp Ser Ala Ala Ser Ser Trp Thr Ser Arg
1070 1075 1080

Arg Ser Ser Arg Asn Ser Leu Gly Arg Ala Pro Ser Leu Lys Arg
1085 1090 1095

Arg Ser Pro Ser Gly Glu Arg Arg Ser Leu Leu Ser Gly Glu Gly
1100 1105 1110

Gln Glu Ser Gln Asp Glu Glu Glu Ser Ser Glu Glu Glu Arg Ala
1115 1120 1125

Ser Pro Ala Gly Ser Asp His Arg His Arg Gly Ser Leu Glu Arg
1130 1135 1140

Glu Ala Lys Ser Ser Phe Asp Leu Pro Asp Thr Leu Gln Val Pro
1145 1150 1155

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Gly	Leu	His	Arg	Thr	Ala	Ser	Gly	Arg	Gly	Ser	Ala	Ser	Glu	His
	1160					1165					1170			
Gln	Asp	Cys	Asn	Gly	Lys	Ser	Ala	Ser	Gly	Arg	Leu	Ala	Arg	Ala
	1175					1180					1185			
Leu	Arg	Pro	Asp	Asp	Pro	Pro	Leu	Asp	Gly	Asp	Asp	Ala	Asp	Asp
	1190					1195					1200			
Glu	Gly	Asn	Leu	Ser	Lys	Gly	Glu	Arg	Val	Arg	Ala	Trp	Ile	Arg
	1205					1210					1215			
Ala	Arg	Leu	Pro	Ala	Cys	Cys	Leu	Glu	Arg	Asp	Ser	Trp	Ser	Ala
	1220					1225					1230			
Tyr	Ile	Phe	Pro	Pro	Gln	Ser	Arg	Phe	Arg	Leu	Leu	Cys	His	Arg
	1235					1240					1245			
Ile	Ile	Thr	His	Lys	Met	Phe	Asp	His	Val	Val	Leu	Val	Ile	Ile
	1250					1255					1260			
Phe	Leu	Asn	Cys	Ile	Thr	Ile	Ala	Met	Glu	Arg	Pro	Lys	Ile	Asp
	1265					1270					1275			
Pro	His	Ser	Ala	Glu	Arg	Ile	Phe	Leu	Thr	Leu	Ser	Asn	Tyr	Ile
	1280					1285					1290			
Phe	Thr	Ala	Val	Phe	Leu	Ala	Glu	Met	Thr	Val	Lys	Val	Val	Ala
	1295					1300					1305			
Leu	Gly	Trp	Cys	Phe	Gly	Glu	Gln	Ala	Tyr	Leu	Arg	Ser	Ser	Trp
	1310					1315					1320			
Asn	Val	Leu	Asp	Gly	Leu	Leu	Val	Leu	Ile	Ser	Val	Ile	Asp	Ile
	1325					1330					1335			
Leu	Val	Ser	Met	Val	Ser	Asp	Ser	Gly	Thr	Lys	Ile	Leu	Gly	Met
	1340					1345					1350			
Leu	Arg	Val	Leu	Arg	Leu	Leu	Arg	Thr	Leu	Arg	Pro	Leu	Arg	Val
	1355					1360					1365			
Ile	Ser	Arg	Ala	Gln	Gly	Leu	Lys	Leu	Val	Val	Glu	Thr	Leu	Met
	1370					1375					1380			
Ser	Ser	Leu	Lys	Pro	Ile	Gly	Asn	Ile	Val	Val	Ile	Cys	Cys	Ala

1385		1390	
Phe Phe Ile Ile Phe Gly Ile Leu Gly Val Gln Leu Phe Lys Gly	1400	1405	1410
Lys Phe Phe Val Cys Gln Gly Glu Asp Thr Arg Asn Ile Thr Asn	1415	1420	1425
Lys Ser Asp Cys Ala Glu Ala Ser Tyr Arg Trp Val Arg His Lys	1430	1435	1440
Tyr Asn Phe Asp Asn Leu Gly Gln Ala Leu Met Ser Leu Phe Val	1445	1450	1455
Leu Ala Ser Lys Asp Gly Trp Val Asp Ile Met Tyr Asp Gly Leu	1460	1465	1470
Asp Ala Val Gly Val Asp Gln Gln Pro Ile Met Asn His Asn Pro	1475	1480	1485
Trp Met Leu Leu Tyr Phe Ile Ser Phe Leu Leu Ile Val Ala Phe	1490	1495	1500
Phe Val Leu Asn Met Phe Val Gly Val Val Val Glu Asn Phe His	1505	1510	1515
Lys Cys Arg Gln His Gln Glu Glu Glu Glu Ala Arg Arg Arg Glu	1520	1525	1530
Glu Lys Arg Leu Arg Arg Leu Glu Lys Lys Arg Arg Ser Lys Glu	1535	1540	1545
Lys Gln Met Ala Glu Ala Gln Cys Lys Pro Tyr Tyr Ser Asp Tyr	1550	1555	1560
Ser Arg Phe Arg Leu Leu Val His His Leu Cys Thr Ser His Tyr	1565	1570	1575
Leu Asp Leu Phe Ile Thr Gly Val Ile Gly Leu Asn Val Val Thr	1580	1585	1590
Met Ala Met Glu His Tyr Gln Gln Pro Gln Ile Leu Asp Glu Ala	1595	1600	1605
Leu Lys Ile Cys Asn Tyr Ile Phe Thr Val Ile Phe Val Leu Glu	1610	1615	1620

Ser Val Phe Lys Leu Val Ala Phe Gly Phe Arg Arg Phe Phe Gln
 1625 1630 1635
 Asp Arg Trp Asn Gln Leu Asp Leu Ala Ile Val Leu Leu Ser Ile
 1640 1645 1650
 Met Gly Ile Thr Leu Glu Glu Ile Glu Val Asn Ala Ser Leu Pro
 1655 1660 1665
 Ile Asn Pro Thr Ile Ile Arg Ile Met Arg Val Leu Arg Ile Ala
 1670 1675 1680
 Arg Val Leu Lys Leu Leu Lys Met Ala Val Gly Met Arg Ala Leu
 1685 1690 1695
 Leu Asp Thr Val Met Gln Ala Leu Pro Gln Val Gly Asn Leu Gly
 1700 1705 1710
 Leu Leu Phe Met Leu Leu Phe Phe Ile Phe Ala Ala Leu Gly Val
 1715 1720 1725
 Glu Leu Phe Gly Asp Leu Glu Cys Asp Glu Thr His Pro Cys Glu
 1730 1735 1740
 Gly Leu Gly Arg His Ala Thr Phe Arg Asn Phe Gly Met Ala Phe
 1745 1750 1755
 Leu Thr Leu Phe Arg Val Ser Thr Gly Asp Asn Trp Asn Gly Ile
 1760 1765 1770
 Met Lys Asp Thr Leu Arg Asp Cys Asp Gln Glu Ser Thr Cys Tyr
 1775 1780 1785
 Asn Thr Val Ile Ser Pro Ile Tyr Phe Val Ser Phe Val Leu Thr
 1790 1795 1800
 Ala Gln Phe Val Leu Val Asn Val Val Ile Ala Val Leu Met Lys
 1805 1810 1815
 His Leu Glu Glu Ser Asn Lys Glu Ala Lys Glu Glu Ala Glu Leu
 1820 1825 1830
 Glu Ala Glu Leu Glu Leu Glu Met Lys Thr Leu Ser Pro Gln Pro
 1835 1840 1845
 His Ser Pro Leu Gly Ser Pro Phe Leu Trp Pro Gly Val Glu Gly
 1850 1855 1860

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Pro Asp Ser Pro Asp Ser Pro Lys Pro Gly Ala Leu His Pro Ala
1865 1870 1875

Ala His Ala Arg Ser Ala Ser His Phe Ser Leu Glu His Pro Thr
1880 1885 1890

Met Gln Pro His Pro Thr Glu Leu Pro Gly Pro Asp Leu Leu Thr
1895 1900 1905

Val Arg Lys Ser Gly Val Ser Arg Thr His Ser Leu Pro Asn Asp
1910 1915 1920

Ser Tyr Met Cys Arg His Gly Ser Thr Ala Glu Gly Pro Leu Gly
1925 1930 1935

His Arg Gly Trp Gly Leu Pro Lys Ala Gln Ser Gly Ser Val Leu
1940 1945 1950

Ser Val His Ser Gln Pro Ala Asp Thr Ser Tyr Ile Leu Gln Leu
1955 1960 1965

Pro Lys Asp Ala Pro His Leu Leu Gln Pro His Ser Ala Pro Thr
1970 1975 1980

Trp Gly Thr Ile Pro Lys Leu Pro Pro Pro Gly Arg Ser Pro Leu
1985 1990 1995

Ala Gln Arg Pro Leu Arg Arg Gln Ala Ala Ile Arg Thr Asp Ser
2000 2005 2010

Leu Asp Val Gln Gly Leu Gly Ser Arg Glu Asp Leu Leu Ala Glu
2015 2020 2025

Val Ser Gly Pro Ser Pro Pro Leu Ala Arg Ala Tyr Ser Phe Trp
2030 2035 2040

Gly Gln Ser Ser Thr Gln Ala Gln Gln His Ser Arg Ser His Ser
2045 2050 2055

Lys Ile Ser Lys His Met Thr Pro Pro Ala Pro Cys Pro Gly Pro
2060 2065 2070

Glu Pro Asn Trp Gly Lys Gly Pro Pro Glu Thr Arg Ser Ser Leu
2075 2080 2085

Glu Leu Asp Thr Glu Leu Ser Trp Ile Ser Gly Asp Leu Leu Pro
2090 2095 2100

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Pro Gly Gly Gln Glu Glu Pro Pro Ser Pro Arg Asp Leu Lys Lys
 2105 2110 2115
 Cys Tyr Ser Val Glu Ala Gln Ser Cys Gln Arg Arg Pro Thr Ser
 2120 2125 2130
 Trp Leu Asp Glu Gln Arg Arg His Ser Ile Ala Val Ser Cys Leu
 2135 2140 2145
 Asp Ser Gly Ser Gln Pro His Leu Gly Thr Asp Pro Ser Asn Leu
 2150 2155 2160
 Gly Gly Gln Pro Leu Gly Gly Pro Gly Ser Arg Pro Lys Lys Lys
 2165 2170 2175
 Leu Ser Pro Pro Ser Ile Thr Ile Asp Pro Pro Glu Ser Gln Gly
 2180 2185 2190
 Pro Arg Thr Pro Pro Ser Pro Gly Ile Cys Leu Arg Arg Arg Ala
 2195 2200 2205
 Pro Ser Ser Asp Ser Lys Asp Pro Leu Ala Ser Gly Pro Pro Asp
 2210 2215 2220
 Ser Met Ala Ala Ser Pro Ser Pro Lys Lys Asp Val Leu Ser Leu
 2225 2230 2235
 Ser Gly Leu Ser Ser Asp Pro Ala Asp Leu Asp Pro
 2240 2245 2250

<210> 17

<211> 2243

<212> PRT

<213> Homo sapiens

<400> 17

Met Asp Glu Glu Glu Asp Gly Ala Gly Ala Glu Glu Ser Gly Gln Pro
 1 5 10 15

Arg Ser Phe Met Arg Leu Asn Asp Leu Ser Gly Ala Gly Gly Arg Pro
 20 25 30

Gly Pro Gly Ser Ala Glu Lys Asp Pro Gly Ser Ala Asp Ser Glu Ala
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40

Glu Gly Leu Pro Tyr Pro Ala Leu Ala Pro Val Val Phe Phe Tyr Leu
50 55 60

Ser Gln Asp Ser Arg Pro Arg Ser Trp Cys Leu Arg Thr Val Cys Asn
65 70 75 80

Pro Trp Phe Glu Arg Ile Ser Met Leu Val Ile Leu Leu Asn Cys Val
85 90 95

Thr Leu Gly Met Phe Arg Pro Cys Glu Asp Ile Ala Cys Asp Ser Gln
100 105 110

Arg Cys Arg Ile Leu Gln Ala Phe Asp Asp Phe Ile Phe Ala Phe Phe
115 120 125

Ala Val Glu Met Val Val Lys Met Val Ala Leu Gly Ile Phe Gly Lys
130 135 140

Lys Cys Tyr Leu Gly Asp Thr Trp Asn Arg Leu Asp Phe Phe Ile Val
145 150 155 160

Ile Ala Gly Met Leu Glu Tyr Ser Leu Asp Leu Gln Asn Val Ser Phe
165 170 175

Ser Ala Val Arg Thr Val Arg Val Leu Arg Pro Leu Arg Ala Ile Asn
180 185 190

Arg Val Pro Ser Met Arg Ile Leu Val Thr Leu Leu Leu Asp Thr Leu
195 200 205

Pro Met Leu Gly Asn Val Leu Leu Leu Cys Phe Phe Val Phe Phe Ile
210 215 220

Phe Gly Ile Val Gly Val Gln Leu Trp Ala Gly Leu Leu Arg Asn Arg
225 230 235 240

Cys Phe Leu Pro Glu Asn Phe Ser Leu Pro Leu Ser Val Asp Leu Glu
245 250 255

Arg Tyr Tyr Gln Thr Glu Asn Glu Asp Glu Ser Pro Phe Ile Cys Ser
260 265 270

Gln Pro Arg Glu Asn Gly Met Arg Ser Cys Arg Ser Val Pro Thr Leu
275 280 285

Arg Gly Asp Gly Gly Gly Gly Pro Pro Cys Gly Leu Asp Tyr Glu Ala
 290 295 300

Tyr Asn Ser Ser Ser Asn Thr Thr Cys Val Asn Trp Asn Gln Tyr Tyr
 305 310 315 320

Thr Asn Cys Ser Ala Gly Glu His Asn Pro Phe Lys Gly Ala Ile Asn
 325 330 335

Phe Asp Asn Ile Gly Tyr Ala Trp Ile Ala Ile Phe Gln Val Ile Thr
 340 345 350

Leu Glu Gly Trp Val Asp Ile Met Tyr Phe Val Met Asp Ala His Ser
 355 360 365

Phe Tyr Asn Phe Ile Tyr Phe Ile Leu Leu Ile Ile Val Gly Ser Phe
 370 375 380

Phe Met Ile Asn Leu Cys Leu Val Val Ile Ala Thr Gln Phe Ser Glu
 385 390 395 400

Thr Lys Gln Arg Glu Ser Gln Leu Met Arg Glu Gln Arg Val Arg Phe
 405 410 415

Leu Ser Asn Ala Ser Thr Leu Ala Ser Phe Ser Glu Pro Gly Ser Cys
 420 425 430

Tyr Glu Glu Leu Leu Lys Tyr Leu Val Tyr Ile Leu Arg Lys Ala Ala
 435 440 445

Arg Arg Leu Ala Gln Val Ser Arg Ala Ala Gly Val Arg Val Gly Leu
 450 455 460

Leu Ser Ser Pro Ala Pro Leu Gly Gly Gln Glu Thr Gln Pro Ser Ser
 465 470 475 480

Ser Cys Ser Arg Ser His Arg Arg Leu Ser Val His His Leu Val His
 485 490 495

His His His His His His His Tyr His Leu Gly Asn Gly Thr Leu
 500 505 510

Arg Ala Pro Arg Ala Ser Pro Glu Ile Gln Asp Arg Asp Ala Asn Gly
 515 520 525

Ser Arg Arg Leu Met Leu Pro Pro Pro Ser Thr Pro Ala Leu Ser Gly
 530 535 540

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Ala Pro Pro Gly Gly Ala Glu Ser Val His Ser Phe Tyr His Ala Asp
545 550 555 560

Cys His Leu Glu Pro Val Arg Cys Gln Ala Pro Pro Pro Arg Ser Pro
565 570 575

Ser Glu Ala Ser Gly Arg Thr Val Gly Ser Gly Lys Val Tyr Pro Thr
580 585 590

Val His Thr Ser Pro Pro Pro Glu Thr Leu Lys Glu Lys Ala Leu Val
595 600 605

Glu Val Ala Ala Ser Ser Gly Pro Pro Thr Leu Thr Ser Leu Asn Ile
610 615 620

Pro Pro Gly Pro Tyr Ser Ser Met His Lys Leu Leu Glu Thr Gln Ser
625 630 635 640

Thr Gly Ala Cys Gln Ser Ser Cys Lys Ile Ser Ser Pro Cys Leu Lys
645 650 655

Ala Asp Ser Gly Ala Cys Gly Pro Asp Ser Cys Pro Tyr Cys Ala Arg
660 665 670

Ala Gly Ala Gly Glu Val Glu Leu Ala Asp Arg Glu Met Pro Asp Ser
675 680 685

Asp Ser Glu Ala Val Tyr Glu Phe Thr Gln Asp Ala Gln His Ser Asp
690 695 700

Leu Arg Asp Pro His Ser Arg Arg Gln Arg Ser Leu Gly Pro Asp Ala
705 710 715 720

Glu Pro Ser Ser Val Leu Ala Phe Trp Arg Leu Ile Cys Asp Thr Phe
725 730 735

Arg Lys Ile Val Asp Ser Lys Tyr Phe Gly Arg Gly Ile Met Ile Ala
740 745 750

Ile Leu Val Asn Thr Leu Ser Met Gly Ile Glu Tyr His Glu Gln Pro
755 760 765

Glu Glu Leu Thr Asn Ala Leu Glu Ile Ser Asn Ile Val Phe Thr Ser
770 775 780

Leu Phe Ala Leu Glu Met Leu Leu Lys Leu Leu Val Tyr Gly Pro Phe
785 790 795 800

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Gly Tyr Ile Lys Asn Pro Tyr Asn Ile Phe Asp Gly Val Ile Val Val
 805 810 815
 Ile Ser Val Trp Glu Ile Val Gly Gln Gln Gly Gly Gly Leu Ser Val
 820 825 830
 Leu Arg Thr Phe Arg Leu Met Arg Val Leu Lys Leu Val Arg Phe Leu
 835 840 845
 Pro Ala Leu Gln Arg Gln Leu Val Val Leu Met Lys Thr Met Asp Asn
 850 855 860
 Val Ala Thr Phe Cys Met Leu Leu Met Leu Phe Ile Phe Ile Phe Ser
 865 870 875 880
 Ile Leu Gly Met His Leu Phe Gly Cys Lys Phe Ala Ser Glu Arg Asp
 885 890 895
 Gly Asp Thr Leu Pro Asp Arg Lys Asn Phe Asp Ser Leu Leu Trp Ala
 900 905 910
 Ile Val Thr Val Phe Gln Ile Leu Thr Gln Glu Asp Trp Asn Lys Val
 915 920 925
 Leu Tyr Asn Gly Met Ala Ser Thr Ser Ser Trp Ala Ala Leu Tyr Phe
 930 935 940
 Ile Ala Leu Met Thr Phe Gly Asn Tyr Val Leu Phe Asn Leu Leu Val
 945 950 955 960
 Ala Ile Leu Val Glu Gly Phe Gln Ala Glu Gly Asp Ala Asn Lys Ser
 965 970 975
 Glu Ser Glu Pro Asp Phe Phe Ser Pro Ser Leu Asp Gly Asp Gly Asp
 980 985 990
 Arg Lys Lys Cys Leu Ala Leu Val Ser Leu Gly Glu His Pro Glu Leu
 995 1000 1005
 Arg Lys Ser Leu Leu Pro Pro Leu Ile Ile His Thr Ala Ala Thr
 1010 1015 1020
 Pro Met Ser Leu Pro Lys Ser Thr Ser Thr Gly Leu Gly Glu Ala
 1025 1030 1035
 Leu Gly Pro Ala Ser Arg Arg Thr Ser Ser Ser Gly Ser Ala Glu
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1050

Pro	Gly	Ala	Ala	His	Glu	Met	Lys	Ser	Pro	Pro	Ser	Ala	Arg	Ser
	1055					1060						1065		
Ser	Pro	His	Ser	Pro	Trp	Ser	Ala	Ala	Ser	Ser	Trp	Thr	Ser	Arg
	1070					1075					1080			
Arg	Ser	Ser	Arg	Asn	Ser	Leu	Gly	Arg	Ala	Pro	Ser	Leu	Lys	Arg
	1085					1090					1095			
Arg	Ser	Pro	Ser	Gly	Glu	Arg	Arg	Ser	Leu	Leu	Ser	Gly	Glu	Gly
	1100					1105					1110			
Gln	Glu	Ser	Gln	Asp	Glu	Glu	Glu	Ser	Ser	Glu	Glu	Glu	Arg	Ala
	1115					1120					1125			
Ser	Pro	Ala	Gly	Ser	Asp	His	Arg	His	Arg	Gly	Ser	Leu	Glu	Arg
	1130					1135					1140			
Glu	Ala	Lys	Ser	Ser	Phe	Asp	Leu	Pro	Asp	Thr	Leu	Gln	Val	Pro
	1145					1150					1155			
Gly	Leu	His	Arg	Thr	Ala	Ser	Gly	Arg	Gly	Ser	Ala	Ser	Glu	His
	1160					1165					1170			
Gln	Asp	Cys	Asn	Gly	Lys	Ser	Ala	Ser	Gly	Arg	Leu	Ala	Arg	Ala
	1175					1180					1185			
Leu	Arg	Pro	Asp	Asp	Pro	Pro	Leu	Asp	Gly	Asp	Asp	Ala	Asp	Asp
	1190					1195					1200			
Glu	Gly	Asn	Leu	Ser	Lys	Gly	Glu	Arg	Val	Arg	Ala	Trp	Ile	Arg
	1205					1210					1215			
Ala	Arg	Leu	Pro	Ala	Cys	Cys	Leu	Glu	Arg	Asp	Ser	Trp	Ser	Ala
	1220					1225					1230			
Tyr	Ile	Phe	Pro	Pro	Gln	Ser	Arg	Phe	Arg	Leu	Leu	Cys	His	Arg
	1235					1240					1245			
Ile	Ile	Thr	His	Lys	Met	Phe	Asp	His	Val	Val	Leu	Val	Ile	Ile
	1250					1255					1260			
Phe	Leu	Asn	Cys	Ile	Thr	Ile	Ala	Met	Glu	Arg	Pro	Lys	Ile	Asp
	1265					1270					1275			

Pro His Ser Ala Glu Arg Ile Phe Leu Thr Leu Ser Asn Tyr Ile
 1280 1285 1290
 Phe Thr Ala Val Phe Leu Ala Glu Met Thr Val Lys Val Val Ala
 1295 1300 1305
 Leu Gly Trp Cys Phe Gly Glu Gln Ala Tyr Leu Arg Ser Ser Trp
 1310 1315 1320
 Asn Val Leu Asp Gly Leu Leu Val Leu Ile Ser Val Ile Asp Ile
 1325 1330 1335
 Leu Val Ser Met Val Ser Asp Ser Gly Thr Lys Ile Leu Gly Met
 1340 1345 1350
 Leu Arg Val Leu Arg Leu Leu Arg Thr Leu Arg Pro Leu Arg Val
 1355 1360 1365
 Ile Ser Arg Ala Gln Gly Leu Lys Leu Val Val Glu Thr Leu Met
 1370 1375 1380
 Ser Ser Leu Lys Pro Ile Gly Asn Ile Val Val Ile Cys Cys Ala
 1385 1390 1395
 Phe Phe Ile Ile Phe Gly Ile Leu Gly Val Gln Leu Phe Lys Gly
 1400 1405 1410
 Lys Phe Phe Val Cys Gln Gly Glu Asp Thr Arg Asn Ile Thr Asn
 1415 1420 1425
 Lys Ser Asp Cys Ala Glu Ala Ser Tyr Arg Trp Val Arg His Lys
 1430 1435 1440
 Tyr Asn Phe Asp Asn Leu Gly Gln Ala Leu Met Ser Leu Phe Val
 1445 1450 1455
 Leu Ala Ser Lys Asp Gly Trp Val Asp Ile Met Tyr Asp Gly Leu
 1460 1465 1470
 Asp Ala Val Gly Val Asp Gln Gln Pro Ile Met Asn His Asn Pro
 1475 1480 1485
 Trp Met Leu Leu Tyr Phe Ile Ser Phe Leu Leu Ile Val Ala Phe
 1490 1495 1500
 Phe Val Leu Asn Met Phe Val Gly Val Val Val Glu Asn Phe His
 1505 1510 1515

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Lys Cys Arg Gln His Gln Glu Glu Glu Ala Arg Arg Arg Glu
 1520 1525 1530
 Glu Lys Arg Leu Arg Arg Leu Glu Lys Lys Arg Arg Lys Ala Gln
 1535 1540 1545
 Cys Lys Pro Tyr Tyr Ser Asp Tyr Ser Arg Phe Arg Leu Leu Val
 1550 1555 1560
 His His Leu Cys Thr Ser His Tyr Leu Asp Leu Phe Ile Thr Gly
 1565 1570 1575
 Val Ile Gly Leu Asn Val Val Thr Met Ala Met Glu His Tyr Gln
 1580 1585 1590
 Gln Pro Gln Ile Leu Asp Glu Ala Leu Lys Ile Cys Asn Tyr Ile
 1595 1600 1605
 Phe Thr Val Ile Phe Val Leu Glu Ser Val Phe Lys Leu Val Ala
 1610 1615 1620
 Phe Gly Phe Arg Arg Phe Phe Gln Asp Arg Trp Asn Gln Leu Asp
 1625 1630 1635
 Leu Ala Ile Val Leu Leu Ser Ile Met Gly Ile Thr Leu Glu Glu
 1640 1645 1650
 Ile Glu Val Asn Ala Ser Leu Pro Ile Asn Pro Thr Ile Ile Arg
 1655 1660 1665
 Ile Met Arg Val Leu Arg Ile Ala Arg Val Leu Lys Leu Leu Lys
 1670 1675 1680
 Met Ala Val Gly Met Arg Ala Leu Leu Asp Thr Val Met Gln Ala
 1685 1690 1695
 Leu Pro Gln Val Gly Asn Leu Gly Leu Leu Phe Met Leu Leu Phe
 1700 1705 1710
 Phe Ile Phe Ala Ala Leu Gly Val Glu Leu Phe Gly Asp Leu Glu
 1715 1720 1725
 Cys Asp Glu Thr His Pro Cys Glu Gly Leu Gly Arg His Ala Thr
 1730 1735 1740
 Phe Arg Asn Phe Gly Met Ala Phe Leu Thr Leu Phe Arg Val Ser
 1745 1750 1755

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Thr	Gly	Asp	Asn	Trp	Asn	Gly	Ile	Met	Lys	Asp	Thr	Leu	Arg	Asp
	1760					1765					1770			
Cys	Asp	Gln	Glu	Ser	Thr	Cys	Tyr	Asn	Thr	Val	Ile	Ser	Pro	Ile
	1775					1780					1785			
Tyr	Phe	Val	Ser	Phe	Val	Leu	Thr	Ala	Gln	Phe	Val	Leu	Val	Asn
	1790					1795					1800			
Val	Val	Ile	Ala	Val	Leu	Met	Lys	His	Leu	Glu	Glu	Ser	Asn	Lys
	1805					1810					1815			
Glu	Ala	Lys	Glu	Glu	Ala	Glu	Leu	Glu	Ala	Glu	Leu	Glu	Leu	Glu
	1820					1825					1830			
Met	Lys	Thr	Leu	Ser	Pro	Gln	Pro	His	Ser	Pro	Leu	Gly	Ser	Pro
	1835					1840					1845			
Phe	Leu	Trp	Pro	Gly	Val	Glu	Gly	Pro	Asp	Ser	Pro	Asp	Ser	Pro
	1850					1855					1860			
Lys	Pro	Gly	Ala	Leu	His	Pro	Ala	Ala	His	Ala	Arg	Ser	Ala	Ser
	1865					1870					1875			
His	Phe	Ser	Leu	Glu	His	Pro	Thr	Met	Gln	Pro	His	Pro	Thr	Glu
	1880					1885					1890			
Leu	Pro	Gly	Pro	Asp	Leu	Leu	Thr	Val	Arg	Lys	Ser	Gly	Val	Ser
	1895					1900					1905			
Arg	Thr	His	Ser	Leu	Pro	Asn	Asp	Ser	Tyr	Met	Cys	Arg	His	Gly
	1910					1915					1920			
Ser	Thr	Ala	Glu	Gly	Pro	Leu	Gly	His	Arg	Gly	Trp	Gly	Leu	Pro
	1925					1930					1935			
Lys	Ala	Gln	Ser	Gly	Ser	Val	Leu	Ser	Val	His	Ser	Gln	Pro	Ala
	1940					1945					1950			
Asp	Thr	Ser	Tyr	Ile	Leu	Gln	Leu	Pro	Lys	Asp	Ala	Pro	His	Leu
	1955					1960					1965			
Leu	Gln	Pro	His	Ser	Ala	Pro	Thr	Trp	Gly	Thr	Ile	Pro	Lys	Leu
	1970					1975					1980			
Pro	Pro	Pro	Gly	Arg	Ser	Pro	Leu	Ala	Gln	Arg	Pro	Leu	Arg	Arg

1985

1990

Gln	Ala	Ala	Ile	Arg	Thr	Asp	Ser	Leu	Asp	Val	Gln	Gly	Leu	Gly
	2000					2005					2010			
Ser	Arg	Glu	Asp	Leu	Leu	Ala	Glu	Val	Ser	Gly	Pro	Ser	Pro	Pro
	2015					2020					2025			
Leu	Ala	Arg	Ala	Tyr	Ser	Phe	Trp	Gly	Gln	Ser	Ser	Thr	Gln	Ala
	2030					2035					2040			
Gln	Gln	His	Ser	Arg	Ser	His	Ser	Lys	Ile	Ser	Lys	His	Met	Thr
	2045					2050					2055			
Pro	Pro	Ala	Pro	Cys	Pro	Gly	Pro	Glu	Pro	Asn	Trp	Gly	Lys	Gly
	2060					2065					2070			
Pro	Pro	Glu	Thr	Arg	Ser	Ser	Leu	Glu	Leu	Asp	Thr	Glu	Leu	Ser
	2075					2080					2085			
Trp	Ile	Ser	Gly	Asp	Leu	Leu	Pro	Pro	Gly	Gly	Gln	Glu	Glu	Pro
	2090					2095					2100			
Pro	Ser	Pro	Arg	Asp	Leu	Lys	Lys	Cys	Tyr	Ser	Val	Glu	Ala	Gln
	2105					2110					2115			
Ser	Cys	Gln	Arg	Arg	Pro	Thr	Ser	Trp	Leu	Asp	Glu	Gln	Arg	Arg
	2120					2125					2130			
His	Ser	Ile	Ala	Val	Ser	Cys	Leu	Asp	Ser	Gly	Ser	Gln	Pro	His
	2135					2140					2145			
Leu	Gly	Thr	Asp	Pro	Ser	Asn	Leu	Gly	Gly	Gln	Pro	Leu	Gly	Gly
	2150					2155					2160			
Pro	Gly	Ser	Arg	Pro	Lys	Lys	Lys	Leu	Ser	Pro	Pro	Ser	Ile	Thr
	2165					2170					2175			
Ile	Asp	Pro	Pro	Glu	Ser	Gln	Gly	Pro	Arg	Thr	Pro	Pro	Ser	Pro
	2180					2185					2190			
Gly	Ile	Cys	Leu	Arg	Arg	Arg	Ala	Pro	Ser	Ser	Asp	Ser	Lys	Asp
	2195					2200					2205			
Pro	Leu	Ala	Ser	Gly	Pro	Pro	Asp	Ser	Met	Ala	Ala	Ser	Pro	Ser
	2210					2215					2220			

Pro Lys Lys Asp Val Leu Ser Leu Ser Gly Leu Ser Ser Asp Pro
 2225 2230 2235

Ala Asp Leu Asp Pro
 2240

<210> 18

<211> 1207

<212> PRT

<213> Homo sapiens

<400> 18

Met Asp Glu Glu Glu Asp Gly Ala Gly Ala Glu Glu Ser Gly Gln Pro
 1 5 10 15

Arg Ser Phe Met Arg Leu Asn Asp Leu Ser Gly Ala Gly Gly Arg Pro
 20 25 30

Gly Pro Gly Ser Ala Glu Lys Asp Pro Gly Ser Ala Asp Ser Glu Ala
 35 40 45

Glu Gly Leu Pro Tyr Pro Ala Leu Ala Pro Val Val Phe Phe Tyr Leu
 50 55 60

Ser Gln Asp Ser Arg Pro Arg Ser Trp Cys Leu Arg Thr Val Cys Asn
 65 70 75 80

Pro Trp Phe Glu Arg Ile Ser Met Leu Val Ile Leu Leu Asn Cys Val
 85 90 95

Thr Leu Gly Met Phe Arg Pro Cys Glu Asp Ile Ala Cys Asp Ser Gln
 100 105 110

Arg Cys Arg Ile Leu Gln Ala Phe Asp Asp Phe Ile Phe Ala Phe Phe
 115 120 125

Ala Val Glu Met Val Val Lys Met Val Ala Leu Gly Ile Phe Gly Lys
 130 135 140

Lys Cys Tyr Leu Gly Asp Thr Trp Asn Arg Leu Asp Phe Phe Ile Val
 145 150 155 160

Ile Ala Gly Met Leu Glu Tyr Ser Leu Asp Leu Gln Asn Val Ser Phe
 165 170 175

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Ser Ala Val Arg Thr Val Arg Val Leu Arg Pro Leu Arg Ala Ile Asn
180 185 190

Arg Val Pro Ser Met Arg Ile Leu Val Thr Leu Leu Leu Asp Thr Leu
195 200 205

Pro Met Leu Gly Asn Val Leu Leu Leu Cys Phe Phe Val Phe Phe Ile
210 215 220

Phe Gly Ile Val Gly Val Gln Leu Trp Ala Gly Leu Leu Arg Asn Arg
225 230 235 240

Cys Phe Leu Pro Glu Asn Phe Ser Leu Pro Leu Ser Val Asp Leu Glu
245 250 255

Arg Tyr Tyr Gln Thr Glu Asn Glu Asp Glu Ser Pro Phe Ile Cys Ser
260 265 270

Gln Pro Arg Glu Asn Gly Met Arg Ser Cys Arg Ser Val Pro Thr Leu
275 280 285

Arg Gly Asp Gly Gly Gly Gly Pro Pro Cys Gly Leu Asp Tyr Glu Ala
290 295 300

Tyr Asn Ser Ser Ser Asn Thr Thr Cys Val Asn Trp Asn Gln Tyr Tyr
305 310 315 320

Thr Asn Cys Ser Ala Gly Glu His Asn Pro Phe Lys Gly Ala Ile Asn
325 330 335

Phe Asp Asn Ile Gly Tyr Ala Trp Ile Ala Ile Phe Gln Val Ile Thr
340 345 350

Leu Glu Gly Trp Val Asp Ile Met Tyr Phe Val Met Asp Ala His Ser
355 360 365

Phe Tyr Asn Phe Ile Tyr Phe Ile Leu Leu Ile Ile Val Gly Ser Phe
370 375 380

Phe Met Ile Asn Leu Cys Leu Val Val Ile Ala Thr Gln Phe Ser Glu
385 390 395 400

Thr Lys Gln Arg Glu Ser Gln Leu Met Arg Glu Gln Arg Val Arg Phe
405 410 415

Leu Ser Asn Ala Ser Thr Leu Ala Ser Phe Ser Glu Pro Gly Ser Cys
420 425 430

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Tyr Glu Glu Leu Leu Lys Tyr Leu Val Tyr Ile Leu Arg Lys Ala Ala
 435 440 445
 Arg Arg Leu Ala Gln Val Ser Arg Ala Ala Gly Val Arg Val Gly Leu
 450 455 460
 Leu Ser Ser Pro Ala Pro Leu Gly Gly Gln Glu Thr Gln Pro Ser Ser
 465 470 475 480
 Ser Cys Ser Arg Ser His Arg Arg Leu Ser Val His His Leu Val His
 485 490 495
 His His His His His His His Tyr His Leu Gly Asn Gly Thr Leu
 500 505 510
 Arg Ala Pro Arg Ala Ser Pro Glu Ile Gln Asp Arg Asp Ala Asn Gly
 515 520 525
 Ser Arg Arg Leu Met Leu Pro Pro Pro Ser Thr Pro Ala Leu Ser Gly
 530 535 540
 Ala Pro Pro Gly Gly Ala Glu Ser Val His Ser Phe Tyr His Ala Asp
 545 550 555 560
 Cys His Leu Glu Pro Val Arg Cys Gln Ala Pro Pro Pro Arg Ser Pro
 565 570 575
 Ser Glu Ala Ser Gly Arg Thr Val Gly Ser Gly Lys Val Tyr Pro Thr
 580 585 590
 Val His Thr Ser Pro Pro Pro Glu Thr Leu Lys Glu Lys Ala Leu Val
 595 600 605
 Glu Val Ala Ala Ser Ser Gly Pro Pro Thr Leu Thr Ser Leu Asn Ile
 610 615 620
 Pro Pro Gly Pro Tyr Ser Ser Met His Lys Leu Leu Glu Thr Gln Ser
 625 630 635 640
 Thr Gly Ala Cys Gln Ser Ser Cys Lys Ile Ser Ser Pro Cys Leu Lys
 645 650 655
 Ala Asp Ser Gly Ala Cys Gly Pro Asp Ser Cys Pro Tyr Cys Ala Arg
 660 665 670
 Ala Gly Ala Gly Glu Val Glu Leu Ala Asp Arg Glu Met Pro Asp Ser
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675

680

685

Asp Ser Glu Ala Val Tyr Glu Phe Thr Gln Asp Ala Gln His Ser Asp
 690 695 700

Leu Arg Asp Pro His Ser Arg Arg Gln Arg Ser Leu Gly Pro Asp Ala
 705 710 715 720

Glu Pro Ser Ser Val Leu Ala Phe Trp Arg Leu Ile Cys Asp Thr Phe
 725 730 735

Arg Lys Ile Val Asp Ser Lys Tyr Phe Gly Arg Gly Ile Met Ile Ala
 740 745 750

Ile Leu Val Asn Thr Leu Ser Met Gly Ile Glu Tyr His Glu Gln Pro
 755 760 765

Glu Glu Leu Thr Asn Ala Leu Glu Ile Ser Asn Ile Val Phe Thr Ser
 770 775 780

Leu Phe Ala Leu Glu Met Leu Leu Lys Leu Leu Val Tyr Gly Pro Phe
 785 790 795 800

Gly Tyr Ile Lys Asn Pro Tyr Asn Ile Phe Asp Gly Val Ile Val Val
 805 810 815

Ile Ser Val Trp Glu Ile Val Gly Gln Gln Gly Gly Gly Leu Ser Val
 820 825 830

Leu Arg Thr Phe Arg Leu Met Arg Val Leu Lys Leu Val Arg Phe Leu
 835 840 845

Pro Ala Leu Gln Arg Gln Leu Val Val Leu Met Lys Thr Met Asp Asn
 850 855 860

Val Ala Thr Phe Cys Met Leu Leu Met Leu Phe Ile Phe Ile Phe Ser
 865 870 875 880

Ile Leu Gly Met His Leu Phe Gly Cys Lys Phe Ala Ser Glu Arg Asp
 885 890 895

Gly Asp Thr Leu Pro Asp Arg Lys Asn Phe Asp Ser Leu Leu Trp Ala
 900 905 910

Ile Val Thr Val Phe Gln Ile Leu Thr Gln Glu Asp Trp Asn Lys Val
 915 920 925

Leu Tyr Asn Gly Met Ala Ser Thr Ser Ser Trp Ala Ala Leu Tyr Phe
 930 935 940

Ile Ala Leu Met Thr Phe Gly Asn Tyr Val Leu Phe Asn Leu Leu Val
 945 950 955 960

Ala Ile Leu Val Glu Gly Phe Gln Ala Glu Gly Asp Ala Asn Lys Ser
 965 970 975

Glu Ser Glu Pro Asp Phe Phe Ser Pro Ser Leu Asp Gly Asp Gly Asp
 980 985 990

Arg Lys Lys Cys Leu Ala Leu Val Ser Leu Gly Glu His Pro Glu Leu
 995 1000 1005

Arg Lys Ser Leu Leu Pro Pro Leu Ile Ile His Thr Ala Ala Thr
 1010 1015 1020

Pro Met Ser Leu Pro Lys Ser Thr Ser Thr Gly Leu Gly Glu Ala
 1025 1030 1035

Leu Gly Pro Ala Ser Arg Arg Thr Ser Ser Ser Gly Ser Ala Glu
 1040 1045 1050

Pro Gly Ala Ala His Glu Met Lys Ser Pro Pro Ser Ala Arg Ser
 1055 1060 1065

Ser Pro His Ser Pro Trp Ser Ala Ala Ser Ser Trp Thr Ser Arg
 1070 1075 1080

Arg Ser Ser Arg Asn Ser Leu Gly Arg Ala Pro Ser Leu Lys Arg
 1085 1090 1095

Arg Ser Pro Ser Gly Glu Arg Arg Ser Leu Leu Ser Gly Glu Gly
 1100 1105 1110

Gln Glu Ser Gln Asp Glu Glu Glu Ser Ser Glu Glu Glu Arg Ala
 1115 1120 1125

Ser Pro Ala Gly Ser Asp His Arg His Arg Gly Ser Leu Glu Arg
 1130 1135 1140

Glu Ala Lys Ser Ser Phe Asp Leu Pro Asp Thr Leu Gln Val Pro
 1145 1150 1155

Gly Leu His Arg Thr Ala Ser Gly Arg Gly Ser Ala Ser Glu His
 1160 1165 1170

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Gln Asp Cys Asn Gly Lys Ser Ala Ser Gly Arg Leu Ala Arg Ala
1175 1180 1185

Leu Arg Pro Asp Asp Pro Pro Leu Asp Gly Asp Asp Ala Asp Asp
1190 1195 1200

Glu Gly Asn Leu
1205

<210> 19

<211> 2353

<212> PRT

<213> Homo sapiens

<400> 19

Met Thr Glu Gly Ala Arg Ala Ala Asp Glu Val Arg Val Pro Leu Gly
1 5 10 15

Ala Pro Pro Pro Gly Pro Ala Ala Leu Val Gly Ala Ser Pro Glu Ser
20 25 30

Pro Gly Ala Pro Gly Arg Glu Ala Glu Arg Gly Ser Glu Leu Gly Val
35 40 45

Ser Pro Ser Glu Ser Pro Ala Ala Glu Arg Gly Ala Glu Leu Gly Ala
50 55 60

Asp Glu Glu Gln Arg Val Pro Tyr Pro Ala Leu Ala Ala Thr Val Phe
65 70 75 80

Phe Cys Leu Gly Gln Thr Thr Arg Pro Arg Ser Trp Cys Leu Arg Leu
85 90 95

Val Cys Asn Pro Trp Phe Glu His Val Ser Met Leu Val Ile Met Leu
100 105 110

Asn Cys Val Thr Leu Gly Met Phe Arg Pro Cys Glu Asp Val Glu Cys
115 120 125

Gly Ser Glu Arg Cys Asn Ile Leu Glu Ala Phe Asp Ala Phe Ile Phe
130 135 140

Ala Phe Phe Ala Val Glu Met Val Ile Lys Met Val Ala Leu Gly Leu
145 150 155 160

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Phe Gly Gln Lys Cys Tyr Leu Gly Asp Thr Trp Asn Arg Leu Asp Phe
 165 170 175
 Phe Ile Val Val Ala Gly Met Met Glu Tyr Ser Leu Asp Gly His Asn
 180 185 190
 Val Ser Leu Ser Ala Ile Arg Thr Val Arg Val Leu Arg Pro Leu Arg
 195 200 205
 Ala Ile Asn Arg Val Pro Ser Met Arg Ile Leu Val Thr Leu Leu Leu
 210 215 220
 Asp Thr Leu Pro Met Leu Gly Asn Val Leu Leu Leu Cys Phe Phe Val
 225 230 235 240
 Phe Phe Ile Phe Gly Ile Val Gly Val Gln Leu Trp Ala Gly Leu Leu
 245 250 255
 Arg Asn Arg Cys Phe Leu Asp Ser Ala Phe Val Arg Asn Asn Asn Leu
 260 265 270
 Thr Phe Leu Arg Pro Tyr Tyr Gln Thr Glu Glu Gly Glu Glu Asn Pro
 275 280 285
 Phe Ile Cys Ser Ser Arg Arg Asp Asn Gly Met Gln Lys Cys Ser His
 290 295 300
 Ile Pro Gly Arg Arg Glu Leu Arg Met Pro Cys Thr Leu Gly Trp Glu
 305 310 315 320
 Ala Tyr Thr Gln Pro Gln Ala Glu Gly Val Gly Ala Ala Arg Asn Ala
 325 330 335
 Cys Ile Asn Trp Asn Gln Tyr Tyr Asn Val Cys Arg Ser Gly Asp Ser
 340 345 350
 Asn Pro His Asn Gly Ala Ile Asn Phe Asp Asn Ile Gly Tyr Ala Trp
 355 360 365
 Ile Ala Ile Phe Gln Val Ile Thr Leu Glu Gly Trp Val Asp Ile Met
 370 375 380
 Tyr Tyr Val Met Asp Ala His Ser Phe Tyr Asn Phe Ile Tyr Phe Ile
 385 390 395 400

Val Ile Ala Thr Gln Phe Ser Glu Thr Lys Gln Arg Glu Ser Gln Leu
420 425 430

Met Arg Glu Gln Arg Ala Arg His Leu Ser Asn Asp Ser Thr Leu Ala
435 440 445

Ser Phe Ser Glu Pro Gly Ser Cys Tyr Glu Glu Leu Leu Lys Tyr Val
450 455 460

Gly His Ile Phe Arg Lys Val Lys Arg Arg Ser Leu Arg Leu Tyr Ala
465 470 475 480

Arg Trp Gln Ser Arg Trp Arg Lys Lys Val Asp Pro Ser Ala Val Gln
485 490 495

Gly Gln Gly Pro Gly His Arg Gln Arg Arg Ala Gly Arg His Thr Ala
500 505 510

Ser Val His His Leu Val Tyr His His His His His His His His His
515 520 525

Tyr His Phe Ser His Gly Ser Pro Arg Arg Pro Gly Pro Glu Pro Gly
530 535 540

Ala Cys Asp Thr Arg Leu Val Arg Ala Gly Ala Pro Pro Ser Pro Pro
545 550 555 560

Ser Pro Gly Arg Gly Pro Pro Asp Ala Glu Ser Val His Ser Ile Tyr
565 570 575

His Ala Asp Cys His Ile Glu Gly Pro Gln Glu Arg Ala Arg Val Ala
580 585 590

His Ala Ala Ala Thr Ala Ala Ala Ser Leu Arg Leu Ala Thr Gly Leu
595 600 605

Gly Thr Met Asn Tyr Pro Thr Ile Leu Pro Ser Gly Val Gly Ser Gly
610 615 620

Lys Gly Ser Thr Ser Pro Gly Pro Lys Gly Lys Trp Ala Gly Gly Pro
625 630 635 640

Pro Gly Thr Gly Gly His Gly Pro Leu Ser Leu Asn Ser Pro Asp Pro
645 650 655

Tyr Glu Lys Ile Pro His Val Val Gly Glu His Gly Leu Gly Gln Ala
660 665 670

Pro Gly His Leu Ser Gly Leu Ser Val Pro Cys Pro Leu Pro Ser Pro
675 680 685

Pro Ala Gly Thr Leu Thr Cys Glu Leu Lys Ser Cys Pro Tyr Cys Thr
690 695 700

Arg Ala Leu Glu Asp Pro Glu Gly Glu Leu Ser Gly Ser Glu Ser Gly
705 710 715 720

Asp Ser Asp Gly Arg Gly Val Tyr Glu Phe Thr Gln Asp Val Arg His
725 730 735

Gly Asp Arg Trp Asp Pro Thr Arg Pro Pro Arg Ala Thr Asp Thr Pro
740 745 750

Gly Pro Gly Pro Gly Ser Pro Gln Arg Arg Ala Gln Gln Arg Ala Ala
755 760 765

Pro Gly Glu Pro Gly Trp Met Gly Arg Leu Trp Val Thr Phe Ser Gly
770 775 780

Lys Leu Arg Arg Ile Val Asp Ser Lys Tyr Phe Ser Arg Gly Ile Met
785 790 795 800

Met Ala Ile Leu Val Asn Thr Leu Ser Met Gly Val Glu Tyr His Glu
805 810 815

Gln Pro Glu Glu Leu Thr Asn Ala Leu Glu Ile Ser Asn Ile Val Phe
820 825 830

Thr Ser Met Phe Ala Leu Glu Met Leu Leu Lys Leu Leu Ala Cys Gly
835 840 845

Pro Leu Gly Tyr Ile Arg Asn Pro Tyr Asn Ile Phe Asp Gly Ile Ile
850 855 860

Val Val Ile Ser Val Trp Glu Ile Val Gly Gln Ala Asp Gly Gly Leu
865 870 875 880

Ser Val Leu Arg Thr Phe Arg Leu Leu Arg Val Leu Lys Leu Val Arg
885 890 895

Phe Leu Pro Ala Leu Arg Arg Gln Leu Val Val Leu Val Lys Thr Met
900 905 910

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Asp Asn Val Ala Thr Phe Cys Thr Leu Leu Met Leu Phe Ile Phe Ile
915 920 925

Phe Ser Ile Leu Gly Met His Leu Phe Gly Cys Lys Phe Ser Leu Lys
930 935 940

Thr Asp Thr Gly Asp Thr Val Pro Asp Arg Lys Asn Phe Asp Ser Leu
945 950 955 960

Leu Trp Ala Ile Val Thr Val Phe Gln Ile Leu Thr Gln Glu Asp Trp
965 970 975

Asn Val Val Leu Tyr Asn Gly Met Ala Ser Thr Ser Ser Trp Ala Ala
980 985 990

Leu Tyr Phe Val Ala Leu Met Thr Phe Gly Asn Tyr Val Leu Phe Asn
995 1000 1005

Leu Leu Val Ala Ile Leu Val Glu Gly Phe Gln Ala Glu Gly Asp
1010 1015 1020

Ala Asn Arg Ser Asp Thr Asp Glu Asp Lys Thr Ser Val His Phe
1025 1030 1035

Glu Glu Asp Phe His Lys Leu Arg Glu Leu Gln Thr Thr Glu Leu
1040 1045 1050

Lys Met Cys Ser Leu Ala Val Thr Pro Asn Gly His Leu Glu Gly
1055 1060 1065

Arg Gly Ser Leu Ser Pro Pro Leu Ile Met Cys Thr Ala Ala Thr
1070 1075 1080

Pro Met Pro Thr Pro Lys Ser Ser Pro Phe Leu Asp Ala Ala Pro
1085 1090 1095

Ser Leu Pro Asp Ser Arg Arg Gly Ser Ser Ser Ser Gly Asp Pro
1100 1105 1110

Pro Leu Gly Asp Gln Lys Pro Pro Ala Ser Leu Arg Ser Ser Pro
1115 1120 1125

Cys Ala Pro Trp Gly Pro Ser Gly Ala Trp Ser Ser Arg Arg Ser
1130 1135 1140

Ser Trp Ser Ser Leu Gly Arg Ala Pro Ser Leu Lys Arg Arg Gly
1145 1150 1155

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Gln	Cys	Gly	Glu	Arg	Glu	Ser	Leu	Leu	Ser	Gly	Glu	Gly	Lys	Gly
	1160					1165					1170			
Ser	Thr	Asp	Asp	Glu	Ala	Glu	Asp	Gly	Arg	Ala	Ala	Pro	Gly	Pro
	1175					1180					1185			
Arg	Ala	Thr	Pro	Leu	Arg	Arg	Ala	Glu	Ser	Leu	Asp	Pro	Arg	Pro
	1190					1195					1200			
Leu	Arg	Pro	Ala	Ala	Leu	Pro	Pro	Thr	Lys	Cys	Arg	Asp	Arg	Asp
	1205					1210					1215			
Gly	Gln	Val	Val	Ala	Leu	Pro	Ser	Asp	Phe	Phe	Leu	Arg	Ile	Asp
	1220					1225					1230			
Ser	His	Arg	Glu	Asp	Ala	Ala	Glu	Leu	Asp	Asp	Asp	Ser	Glu	Asp
	1235					1240					1245			
Ser	Cys	Cys	Leu	Arg	Leu	His	Lys	Val	Leu	Glu	Pro	Tyr	Lys	Pro
	1250					1255					1260			
Gln	Trp	Cys	Arg	Ser	Arg	Glu	Ala	Trp	Ala	Leu	Tyr	Leu	Phe	Ser
	1265					1270					1275			
Pro	Gln	Asn	Arg	Phe	Arg	Val	Ser	Cys	Gln	Lys	Val	Ile	Thr	His
	1280					1285					1290			
Lys	Met	Phe	Asp	His	Val	Val	Leu	Val	Phe	Ile	Phe	Leu	Asn	Cys
	1295					1300					1305			
Val	Thr	Ile	Ala	Leu	Glu	Arg	Pro	Asp	Ile	Asp	Pro	Gly	Ser	Thr
	1310					1315					1320			
Glu	Arg	Val	Phe	Leu	Ser	Val	Ser	Asn	Tyr	Ile	Phe	Thr	Ala	Ile
	1325					1330					1335			
Phe	Val	Ala	Glu	Met	Met	Val	Lys	Val	Val	Ala	Leu	Gly	Leu	Leu
	1340					1345					1350			
Ser	Gly	Glu	His	Ala	Tyr	Leu	Gln	Ser	Ser	Trp	Asn	Leu	Leu	Asp
	1355					1360					1365			
Gly	Leu	Leu	Val	Leu	Val	Ser	Leu	Val	Asp	Ile	Val	Val	Ala	Met
	1370					1375					1380			
Ala	Ser	Ala	Gly	Gly	Ala	Lys	Ile	Leu	Gly	Val	Leu	Arg	Val	Leu

1385		1390	
Arg Leu 1400	Leu Arg Thr Leu 1405	Arg Pro Leu Arg Val 1410	Ile Ser Arg Ala 1395
Pro Gly 1415	Leu Lys Leu Val 1420	Glu Thr Leu Ile 1425	Ser Ser Leu Arg
Pro Ile 1430	Gly Asn Ile Val 1435	Ile Cys Cys Ala 1440	Phe Phe Ile Ile
Phe Gly 1445	Ile Leu Gly Val 1450	Gln Leu Phe Lys Gly 1455	Lys Phe Tyr Tyr
Cys Glu 1460	Gly Pro Asp Thr 1465	Arg Asn Ile Ser Thr 1470	Lys Ala Gln Cys
Arg Ala 1475	Ala His Tyr Arg 1480	Trp Val Arg Arg Lys 1485	Tyr Asn Phe Asp
Asn Leu 1490	Gly Gln Ala Leu 1495	Met Ser Leu Phe Val 1500	Leu Ser Ser Lys
Asp Gly 1505	Trp Val Asn Ile 1510	Met Tyr Asp Gly Leu 1515	Asp Ala Val Gly
Val Asp 1520	Gln Gln Pro Val 1525	Gln Asn His Asn Pro 1530	Trp Met Leu Leu
Tyr Phe 1535	Ile Ser Phe Leu 1540	Leu Ile Val Ser Phe 1545	Phe Val Leu Asn
Met Phe 1550	Val Gly Val Val 1555	Val Glu Asn Phe His 1560	Lys Cys Arg Gln
His Gln 1565	Glu Ala Glu Glu 1570	Ala Arg Arg Arg Glu 1575	Glu Lys Arg Leu
Arg Arg 1580	Leu Glu Arg Arg 1585	Arg Arg Ser Thr Phe 1590	Pro Ser Pro Glu
Ala Gln 1595	Arg Arg Pro Tyr 1600	Tyr Ala Asp Tyr Ser 1605	Pro Thr Arg Arg
Ser Ile 1610	His Ser Leu Cys 1615	Thr Ser His Tyr Leu 1620	Asp Leu Phe Ile

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Thr	Phe	Ile	Ile	Cys	Val	Asn	Val	Ile	Thr	Met	Ser	Met	Glu	His
	1625					1630					1635			
Tyr	Asn	Gln	Pro	Lys	Ser	Leu	Asp	Glu	Ala	Leu	Lys	Tyr	Cys	Asn
	1640					1645					1650			
Tyr	Val	Phe	Thr	Ile	Val	Phe	Val	Phe	Glu	Ala	Ala	Leu	Lys	Leu
	1655					1660					1665			
Val	Ala	Phe	Gly	Phe	Arg	Arg	Phe	Phe	Lys	Asp	Arg	Trp	Asn	Gln
	1670					1675					1680			
Leu	Asp	Leu	Ala	Ile	Val	Leu	Leu	Ser	Leu	Met	Gly	Ile	Thr	Leu
	1685					1690					1695			
Glu	Glu	Ile	Glu	Met	Ser	Ala	Ala	Leu	Pro	Ile	Asn	Pro	Thr	Ile
	1700					1705					1710			
Ile	Arg	Ile	Met	Arg	Val	Leu	Arg	Ile	Ala	Arg	Val	Leu	Lys	Leu
	1715					1720					1725			
Leu	Lys	Met	Ala	Thr	Gly	Met	Arg	Ala	Leu	Leu	Asp	Thr	Val	Val
	1730					1735					1740			
Gln	Ala	Leu	Pro	Gln	Val	Gly	Asn	Leu	Gly	Leu	Leu	Phe	Met	Leu
	1745					1750					1755			
Leu	Phe	Phe	Ile	Tyr	Ala	Ala	Leu	Gly	Val	Glu	Leu	Phe	Gly	Arg
	1760					1765					1770			
Leu	Glu	Cys	Ser	Glu	Asp	Asn	Pro	Cys	Glu	Gly	Leu	Ser	Arg	His
	1775					1780					1785			
Ala	Thr	Phe	Ser	Asn	Phe	Gly	Met	Ala	Phe	Leu	Thr	Leu	Phe	Arg
	1790					1795					1800			
Val	Ser	Thr	Gly	Asp	Asn	Trp	Asn	Gly	Ile	Met	Lys	Asp	Thr	Leu
	1805					1810					1815			
Arg	Glu	Cys	Ser	Arg	Glu	Asp	Lys	His	Cys	Leu	Ser	Tyr	Leu	Pro
	1820					1825					1830			
Ala	Leu	Ser	Pro	Val	Tyr	Phe	Val	Thr	Phe	Val	Leu	Val	Ala	Gln
	1835					1840					1845			
Phe	Val	Leu	Val	Asn	Val	Val	Val	Ala	Val	Leu	Met	Lys	His	Leu
	1850					1855					1860			

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Glu Glu Ser Asn Lys Glu Ala Arg Glu Asp Ala Glu Leu Asp Ala
1865 1870 1875

Glu Ile Glu Leu Glu Met Ala Gln Gly Pro Gly Ser Ala Arg Arg
1880 1885 1890

Val Asp Ala Asp Arg Pro Pro Leu Pro Gln Glu Ser Pro Gly Ala
1895 1900 1905

Arg Asp Ala Pro Asn Leu Val Ala Arg Lys Val Ser Val Ser Arg
1910 1915 1920

Met Leu Ser Leu Pro Asn Asp Ser Tyr Met Phe Arg Pro Val Val
1925 1930 1935

Pro Ala Ser Ala Pro His Pro Arg Pro Leu Gln Glu Val Glu Met
1940 1945 1950

Glu Thr Tyr Gly Ala Gly Thr Pro Leu Gly Ser Val Ala Ser Val
1955 1960 1965

His Ser Pro Pro Ala Glu Ser Cys Ala Ser Leu Gln Ile Pro Leu
1970 1975 1980

Ala Val Ser Ser Pro Ala Arg Ser Gly Glu Pro Leu His Ala Leu
1985 1990 1995

Ser Pro Arg Gly Thr Ala Arg Ser Pro Ser Leu Ser Arg Leu Leu
2000 2005 2010

Cys Arg Gln Glu Ala Val His Thr Asp Ser Leu Glu Gly Lys Ile
2015 2020 2025

Asp Ser Pro Arg Asp Thr Leu Asp Pro Ala Glu Pro Gly Glu Lys
2030 2035 2040

Thr Pro Val Arg Pro Val Thr Gln Gly Gly Ser Leu Gln Ser Pro
2045 2050 2055

Pro Arg Ser Pro Arg Pro Ala Ser Val Arg Thr Arg Lys His Thr
2060 2065 2070

Phe Gly Gln Arg Cys Val Ser Ser Arg Pro Ala Ala Pro Gly Gly
2075 2080 2085

Glu Glu Ala Glu Ala Ser Asp Pro Ala Asp Glu Glu Val Ser His
2090 2095 2100

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Ile	Thr	Ser	Ser	Ala	Cys	Pro	Trp	Gln	Pro	Thr	Ala	Glu	Pro	His
	2105					2110					2115			
Gly	Pro	Glu	Ala	Ser	Pro	Val	Ala	Gly	Gly	Glu	Arg	Asp	Leu	Arg
	2120					2125					2130			
Arg	Leu	Tyr	Ser	Val	Asp	Ala	Gln	Gly	Phe	Leu	Asp	Lys	Pro	Gly
	2135					2140					2145			
Arg	Ala	Asp	Glu	Gln	Trp	Arg	Pro	Ser	Ala	Glu	Leu	Gly	Ser	Gly
	2150					2155					2160			
Glu	Pro	Gly	Glu	Ala	Lys	Ala	Trp	Gly	Pro	Glu	Ala	Glu	Pro	Ala
	2165					2170					2175			
Leu	Gly	Ala	Arg	Arg	Lys	Lys	Lys	Met	Ser	Pro	Pro	Cys	Ile	Ser
	2180					2185					2190			
Val	Glu	Pro	Pro	Ala	Glu	Asp	Glu	Gly	Ser	Ala	Arg	Pro	Ser	Ala
	2195					2200					2205			
Ala	Glu	Gly	Gly	Ser	Thr	Thr	Leu	Arg	Arg	Arg	Thr	Pro	Ser	Cys
	2210					2215					2220			
Glu	Ala	Thr	Pro	His	Arg	Asp	Ser	Leu	Glu	Pro	Thr	Glu	Gly	Ser
	2225					2230					2235			
Gly	Ala	Gly	Gly	Asp	Pro	Ala	Ala	Lys	Gly	Glu	Arg	Trp	Gly	Gln
	2240					2245					2250			
Ala	Ser	Cys	Arg	Ala	Glu	His	Leu	Thr	Val	Pro	Ser	Phe	Ala	Phe
	2255					2260					2265			
Glu	Pro	Leu	Asp	Leu	Gly	Val	Pro	Ser	Gly	Asp	Pro	Phe	Leu	Asp
	2270					2275					2280			
Gly	Ser	His	Ser	Val	Thr	Pro	Glu	Ser	Arg	Ala	Ser	Ser	Ser	Gly
	2285					2290					2295			
Ala	Ile	Val	Pro	Leu	Glu	Pro	Pro	Glu	Ser	Glu	Pro	Pro	Met	Pro
	2300					2305					2310			
Val	Gly	Asp	Pro	Pro	Glu	Lys	Arg	Arg	Gly	Leu	Tyr	Leu	Thr	Val
	2315					2320					2325			
Pro	Gln	Cys	Pro	Leu	Glu	Lys	Pro	Gly	Ser	Pro	Ser	Ala	Thr	Pro

2330

2335

Ala Pro Gly Gly Gly Ala Asp Asp Pro Val
2345 2350

<210> 20

<211> 1536

<212> PRT

<213> Homo sapiens

<400> 20

Pro Glu Glu Leu Thr Asn Ala Leu Glu Ile Ser Asn Ile Val Phe Thr
1 5 10 15

Ser Met Phe Ala Leu Glu Met Leu Leu Lys Leu Leu Ala Cys Gly Pro
20 25 30

Leu Gly Tyr Ile Arg Asn Pro Tyr Asn Ile Phe Asp Gly Ile Ile Val
35 40 45

Val Ile Ser Val Trp Glu Ile Val Gly Gln Ala Asp Gly Gly Leu Ser
50 55 60

Val Leu Arg Thr Phe Arg Leu Leu Arg Val Leu Lys Leu Val Arg Phe
65 70 75 80

Leu Pro Ala Leu Arg Arg Gln Leu Val Val Leu Val Lys Thr Met Asp
85 90 95

Asn Val Ala Thr Phe Cys Thr Leu Leu Met Leu Phe Ile Phe Ile Phe
100 105 110

Ser Ile Leu Gly Met His Leu Phe Gly Cys Lys Phe Ser Leu Lys Thr
115 120 125

Asp Thr Gly Asp Thr Val Pro Asp Arg Lys Asn Phe Asp Ser Leu Leu
130 135 140

Trp Ala Ile Val Thr Val Phe Gln Ile Leu Thr Gln Glu Asp Trp Asn
145 150 155 160

Val Val Leu Tyr Asn Gly Met Ala Ser Thr Ser Ser Trp Ala Ala Leu
165 170 175

Tyr Phe Val Ala Leu Met Thr Phe Gly Asn Tyr Val Leu Phe Asn Leu
 180 185 190
 Leu Val Ala Ile Leu Val Glu Gly Phe Gln Ala Glu Gly Asp Ala Asn
 195 200 205
 Arg Ser Asp Thr Asp Glu Asp Lys Thr Ser Val His Phe Glu Glu Asp
 210 215 220
 Phe His Lys Leu Arg Glu Leu Gln Thr Thr Glu Leu Lys Met Cys Ser
 225 230 235 240
 Leu Ala Val Thr Pro Asn Gly His Leu Glu Gly Arg Gly Ser Leu Ser
 245 250 255
 Pro Pro Leu Ile Met Cys Thr Ala Ala Thr Pro Met Pro Thr Pro Lys
 260 265 270
 Ser Ser Pro Phe Leu Asp Ala Ala Pro Ser Leu Pro Asp Ser Arg Arg
 275 280 285
 Gly Ser Ser Ser Ser Gly Asp Pro Pro Leu Gly Asp Gln Lys Pro Pro
 290 295 300
 Ala Ser Leu Arg Ser Ser Pro Cys Ala Pro Trp Gly Pro Ser Gly Ala
 305 310 315 320
 Trp Ser Ser Arg Arg Ser Ser Trp Ser Ser Leu Gly Arg Ala Pro Ser
 325 330 335
 Leu Lys Arg Arg Gly Gln Cys Gly Glu Arg Glu Ser Leu Leu Ser Gly
 340 345 350
 Glu Gly Lys Gly Ser Thr Asp Asp Glu Ala Glu Asp Gly Arg Ala Ala
 355 360 365
 Pro Gly Pro Arg Ala Thr Pro Leu Arg Arg Ala Glu Ser Leu Asp Pro
 370 375 380
 Arg Pro Leu Arg Pro Ala Ala Leu Pro Pro Thr Lys Cys Arg Asp Arg
 385 390 395 400
 Asp Gly Gln Val Val Ala Leu Pro Ser Asp Phe Phe Leu Arg Ile Asp
 405 410 415
 Ser His Arg Glu Asp Ala Ala Glu Leu Asp Asp Asp Ser Glu Asp Ser
 420 425 430

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Cys Cys Leu Arg Leu His Lys Val Leu Glu Pro Tyr Lys Pro Gln Trp
435 440 445

Cys Arg Ser Arg Glu Ala Trp Ala Leu Tyr Leu Phe Ser Pro Gln Asn
450 455 460

Arg Phe Arg Val Ser Cys Gln Lys Val Ile Thr His Lys Met Phe Asp
465 470 475 480

His Val Val Leu Val Phe Ile Phe Leu Asn Cys Val Thr Ile Ala Leu
485 490 495

Glu Arg Pro Asp Ile Asp Pro Gly Ser Thr Glu Arg Val Phe Leu Ser
500 505 510

Val Ser Asn Tyr Ile Phe Thr Ala Ile Phe Val Ala Glu Met Met Val
515 520 525

Lys Val Val Ala Leu Gly Leu Leu Ser Gly Glu His Ala Tyr Leu Gln
530 535 540

Ser Ser Trp Asn Leu Leu Asp Gly Leu Leu Val Leu Val Ser Leu Val
545 550 555 560

Asp Ile Val Val Ala Met Ala Ser Ala Gly Gly Ala Lys Ile Leu Gly
565 570 575

Val Leu Arg Val Leu Arg Leu Leu Arg Thr Leu Arg Pro Leu Arg Val
580 585 590

Ile Ser Arg Ala Pro Gly Leu Lys Leu Val Val Glu Thr Leu Ile Ser
595 600 605

Ser Leu Arg Pro Ile Gly Asn Ile Val Leu Ile Cys Cys Ala Phe Phe
610 615 620

Ile Ile Phe Gly Ile Leu Gly Val Gln Leu Phe Lys Gly Lys Phe Tyr
625 630 635 640

Tyr Cys Glu Gly Pro Asp Thr Arg Asn Ile Ser Thr Lys Ala Gln Cys
645 650 655

Arg Ala Ala His Tyr Arg Trp Val Arg Arg Lys Tyr Asn Phe Asp Asn
660 665 670

Leu Gly Gln Ala Leu Met Ser Leu Phe Val Leu Ser Ser Lys Asp Gly
675 680 685

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Trp Val Asn Ile Met Tyr Asp Gly Leu Asp Ala Val Gly Val Asp Gln
 690 695 700
 Gln Pro Val Gln Asn His Asn Pro Trp Met Leu Leu Tyr Phe Ile Ser
 705 710 715 720
 Phe Leu Leu Ile Val Ser Phe Phe Val Leu Asn Met Phe Val Gly Val
 725 730 735
 Val Val Glu Asn Phe His Lys Cys Arg Gln His Gln Glu Ala Glu Glu
 740 745 750
 Ala Arg Arg Arg Glu Glu Lys Arg Leu Arg Arg Leu Glu Arg Arg Arg
 755 760 765
 Arg Ser Thr Phe Pro Ser Pro Glu Ala Gln Arg Arg Pro Tyr Tyr Ala
 770 775 780
 Asp Tyr Ser Pro Thr Arg Arg Ser Ile His Ser Leu Cys Thr Ser His
 785 790 795 800
 Tyr Leu Asp Leu Phe Ile Thr Phe Ile Ile Cys Val Asn Val Ile Thr
 805 810 815
 Met Ser Met Glu His Tyr Asn Gln Pro Lys Ser Leu Asp Glu Ala Leu
 820 825 830
 Lys Tyr Cys Asn Tyr Val Phe Thr Ile Val Phe Val Phe Glu Ala Ala
 835 840 845
 Leu Lys Leu Val Ala Phe Gly Phe Arg Arg Phe Phe Lys Asp Arg Trp
 850 855 860
 Asn Gln Leu Asp Leu Ala Ile Val Leu Leu Ser Leu Met Gly Ile Thr
 865 870 875 880
 Leu Glu Glu Ile Glu Met Ser Ala Ala Leu Pro Ile Asn Pro Thr Ile
 885 890 895
 Ile Arg Ile Met Arg Val Leu Arg Ile Ala Arg Val Leu Lys Leu Leu
 900 905 910
 Lys Met Ala Thr Gly Met Arg Ala Leu Leu Asp Thr Val Val Gln Ala
 915 920 925
 Leu Pro Gln Val Gly Asn Leu Gly Leu Leu Phe Met Leu Leu Phe Phe
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930

935

Ile Tyr Ala Ala Leu Gly Val Glu Leu Phe Gly Arg Leu Glu Cys Ser
945 950 955 960

Glu Asp Asn Pro Cys Glu Gly Leu Ser Arg His Ala Thr Phe Ser Asn
965 970 975

Phe Gly Met Ala Phe Leu Thr Leu Phe Arg Val Ser Thr Gly Asp Asn
980 985 990

Trp Asn Gly Ile Met Lys Asp Thr Leu Arg Glu Cys Ser Arg Glu Asp
995 1000 1005

Lys His Cys Leu Ser Tyr Leu Pro Ala Leu Ser Pro Val Tyr Phe
1010 1015 1020

Val Thr Phe Val Leu Val Ala Gln Phe Val Leu Val Asn Val Val
1025 1030 1035

Val Ala Val Leu Met Lys His Leu Glu Glu Ser Asn Lys Glu Ala
1040 1045 1050

Arg Glu Asp Ala Glu Leu Asp Ala Glu Ile Glu Leu Glu Met Ala
1055 1060 1065

Gln Gly Pro Gly Ser Ala Arg Arg Val Asp Ala Asp Arg Pro Pro
1070 1075 1080

Leu Pro Gln Glu Ser Pro Gly Ala Arg Asp Ala Pro Asn Leu Val
1085 1090 1095

Ala Arg Lys Val Ser Val Ser Arg Met Leu Ser Leu Pro Asn Asp
1100 1105 1110

Ser Tyr Met Phe Arg Pro Val Val Pro Ala Ser Ala Pro His Pro
1115 1120 1125

Arg Pro Leu Gln Glu Val Glu Met Glu Thr Tyr Gly Ala Gly Thr
1130 1135 1140

Pro Leu Gly Ser Val Ala Ser Val His Ser Pro Pro Ala Glu Ser
1145 1150 1155

Cys Ala Ser Leu Gln Ile Pro Leu Ala Val Ser Ser Pro Ala Arg
1160 1165 1170

Ser Gly Glu Pro Leu His Ala Leu Ser Pro Arg Gly Thr Ala Arg
 1175 1180 1185
 Ser Pro Ser Leu Ser Arg Leu Leu Cys Arg Gln Glu Ala Val His
 1190 1195 1200
 Thr Asp Ser Leu Glu Gly Lys Ile Asp Ser Pro Arg Asp Thr Leu
 1205 1210 1215
 Asp Pro Ala Glu Pro Gly Glu Lys Thr Pro Val Arg Pro Val Thr
 1220 1225 1230
 Gln Gly Gly Ser Leu Gln Ser Pro Pro Arg Ser Pro Arg Pro Ala
 1235 1240 1245
 Ser Val Arg Thr Arg Lys His Thr Phe Gly Gln His Cys Val Ser
 1250 1255 1260
 Ser Arg Pro Ala Ala Pro Gly Gly Glu Glu Ala Glu Ala Ser Asp
 1265 1270 1275
 Pro Ala Asp Glu Glu Val Ser His Ile Thr Ser Ser Ala Cys Pro
 1280 1285 1290
 Trp Gln Pro Thr Ala Glu Pro His Gly Pro Glu Ala Ser Pro Val
 1295 1300 1305
 Ala Gly Gly Glu Arg Asp Leu Arg Arg Leu Tyr Ser Val Asp Ala
 1310 1315 1320
 Gln Gly Phe Leu Asp Lys Pro Gly Arg Ala Asp Glu Gln Trp Arg
 1325 1330 1335
 Pro Ser Ala Glu Leu Gly Ser Gly Glu Pro Gly Glu Ala Lys Ala
 1340 1345 1350
 Trp Gly Pro Glu Ala Glu Pro Ala Leu Gly Ala Arg Arg Lys Lys
 1355 1360 1365
 Lys Met Ser Pro Pro Cys Ile Ser Val Glu Pro Pro Ala Glu Asp
 1370 1375 1380
 Glu Gly Ser Ala Arg Pro Ser Ala Ala Glu Gly Gly Ser Thr Thr
 1385 1390 1395
 Leu Arg Arg Arg Thr Pro Ser Cys Glu Ala Thr Pro His Arg Asp
 1400 1405 1410

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Ser Leu Glu Pro Thr Glu Gly Ser Gly Ala Gly Gly Asp Pro Ala
 1415 1420 1425
 Ala Lys Gly Glu Arg Trp Gly Gln Ala Ser Cys Arg Ala Glu His
 1430 1435 1440
 Leu Thr Val Pro Ser Phe Ala Phe Glu Pro Leu Asp Leu Gly Val
 1445 1450 1455
 Pro Ser Gly Asp Pro Phe Leu Asp Gly Ser His Ser Val Thr Pro
 1460 1465 1470
 Glu Ser Arg Ala Ser Ser Ser Gly Ala Ile Val Pro Leu Glu Pro
 1475 1480 1485
 Pro Glu Ser Glu Pro Pro Met Pro Val Gly Asp Pro Pro Glu Lys
 1490 1495 1500
 Arg Arg Gly Leu Tyr Leu Thr Val Pro Gln Cys Pro Leu Glu Lys
 1505 1510 1515
 Pro Gly Ser Pro Ser Ala Thr Pro Ala Pro Gly Gly Gly Ala Asp
 1520 1525 1530
 Asp Pro Val
 1535

<210> 21

<211> 28

<212> PRT

<213> Conus geographus

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<223> Xaa = any amino acid

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Arg Ser Cys Asn Xaa Tyr Thr Lys Arg Cys Tyr Xaa
20 25

<210> 22

<211> 25

<212> PRT

<213> Conus magus

<400> 22

Cys Lys Gly Lys Gly Ala Lys Cys Ser Arg Leu Met Tyr Asp Cys Cys
1 5 10 15

Thr Gly Ser Cys Arg Ser Gly Lys Cys
20 25

<210> 23

<211> 48

<212> PRT

<213> Agelenopsis aperta

<400> 23

Lys Lys Lys Cys Ile Ala Lys Asp Tyr Gly Arg Cys Lys Trp Gly Gly
1 5 10 15

Thr Pro Cys Cys Arg Gly Arg Gly Cys Ile Cys Ser Ile Met Gly Thr
20 25 30

Asn Cys Glu Cys Lys Pro Arg Leu Ile Met Glu Gly Leu Gly Leu Ala
35 40 45

<210> 24

<211> 76

<212> PRT

<213> Agelenopsis aperta

<400> 24

Ser Cys Ile Asp Ile Gly Gly Asp Cys Asp Gly Glu Lys Asp Asp Cys
1 5 10 15

Gln Cys Cys Arg Arg Asn Gly Tyr Cys Ser Cys Tyr Ser Leu Phe Gly
20 25 30

Tyr Leu Lys Ser Gly Cys Lys Cys Val Val Gly Thr Ser Ala Glu Phe
35 40 45

Gln Gly Ile Cys Arg Arg Lys Ala Arg Gln Cys Tyr Asn Ser Asp Pro
50 55 60

Asp Lys Cys Glu Ser His Asn Lys Pro Lys Arg Arg
65 70 75

<210> 25

<211> 29

<212> PRT

<213> Conus magus

<400> 25

Thr Arg Cys Lys Gly Lys Gly Ala Pro Cys Arg Lys Thr Met Tyr Asp
1 5 10 15

pha4262.ST25.txt

Cys Cys Ser Gly Ser Cys Gly Arg Arg Gly Lys Cys Gly
 20 25

<210> 26

<211> 41

<212> PRT

<213> Hysterocrates gigas

<400> 26

Gly Val Asp Lys Ala Gly Cys Arg Tyr Met Phe Gly Gly Cys Ser Val
 1 5 10 15

Asn Asp Asp Cys Cys Pro Arg Leu Gly Cys His Ser Leu Phe Ser Tyr
 20 25 30

Cys Ala Trp Asp Leu Thr Phe Ser Asp
 35 40